97-84306-6

U.S. Federal Trade Commission

Report of the Federal Trade Commission...

Washington

1936

97-84306-6
MASTER NEGATIVE #

COLUMBIA UNIVERSITY LIBRARIES
PRESERVATION DIVISION

BIBLIOGRAPHIC MICROFORM TARGET

ORIGINAL MATERIAL AS FILMED - EXISTING BIBLIOGRAPHIC RECORD

BUSINESS

U. S. *Federal trade commission.*

... Report of the Federal trade commission on the distribution and sale of milk and milk products. Boston, Baltimore, Cincinnati, St. Louis. Letter from the chairman of the Federal trade commission transmitting the fourth report of the Federal trade commission regarding the distribution and sale of milk and milk products, entitled "Report of Federal trade commission on milk-market regulation and practices of distributors in relation to margins, costs, and profits of distributors in Boston, Baltimore, Cincinnati, and Saint Louis" ... Washington, U. S. Govt. print. off., 1936.

ix, 243 p. incl. tables. 23½cm. (74th Cong., 2d sess. House. Doc. 501)

(Continued on next card)

408358

36-26744

[5]

ONLYED

BUSINESS

U. S. *Federal trade commission.* ... Report of the Federal trade commission on the distribution and sale of milk and milk products ... 1936. (Card 2)

Referred to the Committee on interstate and foreign commerce and ordered printed June 4, 1936.

Running title: Distribution and sale of milk and milk products.

1. Milk supply—Boston. 2. Milk supply—Baltimore. 3. Milk supply—Cincinnati. 4. Milk supply—St. Louis. I. Title. II. Title: Distribution and sale of milk and milk products.

36-26744

Library of Congress HD9282.U4A5 1936 b

Copy 2.

[5]

ONLYED

Pc 338.1

RESTRICTIONS ON USE: Reproductions may not be made without permission from Columbia University Libraries.

TECHNICAL MICROFORM DATA

FILM SIZE: 35mm REDUCTION RATIO: 11:1 IMAGE PLACEMENT: IA (IIA) IB IIB

DATE FILMED: 1-14-98 INITIALS: PB

TRACKING # : 30730

FILMED BY PRESERVATION RESOURCES, BETHLEHEM, PA.

BIBLIOGRAPHIC IRREGULARITIES

MAIN ENTRY: U.S. Federal Trade Commission

Report of the Federal Trade Commission on the distribution and sale of milk and milk products

Bibliographic Irregularities in the Original Document:

List all volumes and pages affected; include name of institution if filming borrowed text.

____Page(s) missing/not available:_____

____Volume(s) missing/not available:_____

____Illegible and/or damaged page(s):_____

_____

____Page(s) or volume(s) misnumbered:_____

____Bound out of sequence:_____

____Page(s) or volume(s) filmed from copy borrowed from:_____

_____

____Other:_____

_____

X "Errata" inserted between pages 10-11

____Inserted material:_____

TRACKING#: MSH30730

LIBRARY
HOOL OF BUSINESS

74th Congress, 2d Session - - - - - House Document No. 501

Report of the

FEDERAL TRADE COMMISSION

on the

DISTRIBUTION AND SALE OF MILK AND MILK PRODUCTS

BOSTON, BALTIMORE, CINCINNATI, ST. LOUIS

LETTER

FROM THE

CHAIRMAN OF THE FEDERAL TRADE COMMISSION

TRANSMITTING

THE FOURTH REPORT OF THE FEDERAL TRADE COMMISSION REGARDING THE DISTRIBUTION AND SALE OF MILK AND MILK PRODUCTS, ENTITLED "REPORT OF FEDERAL TRADE COMMISSION ON MILK-MARKET REGULATION AND PRACTICES OF DISTRIBUTORS IN RELATION TO MARGINS, COSTS, AND PROFITS OF DISTRIBUTORS IN BOSTON, BALTIMORE, CINCINNATI, AND SAINT LOUIS"

JUNE 4, 1936.—Referred to the Committee on Interstate and Foreign Commerce and ordered to be printed

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1936

Business

D302.2
Un3334

H.R. 7191

LETTER OF TRANSMITTAL

FEDERAL TRADE COMMISSION,
Washington, June 4, 1936.

THE SPEAKER OF THE HOUSE,
House of Representatives, Washington, D. C.

SIR: I have the honor to transmit herewith a fourth report of the Federal Trade Commission, regarding the distribution and sale of milk and milk products, entitled "Report of Federal Trade Commission on Milk Market Regulation and Practices of Distributors in Relation to Margins, Costs, and Profits of Distributors in Boston, Baltimore, Cincinnati, and St. Louis."

The three previous reports of the Commission on this subject were as follows: (1) General report, including hearings, on the Connecticut and Philadelphia milksheds (H. Doc. 152, 74th Cong., 1st sess.), (2) costs, investment and profits in the Connecticut and Philadelphia milksheds (H. Doc. 387, 74th Cong., 2d sess.), and (3) a report on the Chicago milkshed which was sent to Congress on April 15, 1936, but which has not yet been printed.

Like the previous reports, the present report was prepared and is submitted pursuant to House Concurrent Resolution No. 32, Seventy-third Congress, second session, adopted June 15, 1934.

By direction of the Commission.

CHARLES H. MARCH, *Chairman.*

CONTENTS

Chapter I

		Page
Introduction and summary		1
Section 1.	Origin and scope of inquiry	1
2.	Summary of report	1
3.	Difficulties of controlling the marketing of milk	12

Chapter II. Description of Markets, Cooperative Associations, and Regulatory Agencies

Section 1.	The Boston milkshed	13
	Number and type of distributors in Boston market	14
	Milk consumption in Boston	15
	Market conditions, 1929 to 1935	16
	Sanitary requirements	18
2.	Cooperatives in Boston milkshed	19
	The New England Milk Producers' Association	19
	United Farmers Cooperative	20
	New England Dairies, Inc	22
	Massachusetts Dairymen's Cooperative Association	24
	Bellows Falls Cooperative Creamery, Inc	27
3.	Federal control of the Boston market	28
4.	Massachusetts Milk-Control Board	30
5.	Milk-settlement plans in the Boston market	32
	Introduction	32
	The Boston base surplus plan	33
6.	The Baltimore milkshed	44
	Sanitary requirements	47
7.	The Maryland Cooperative Milk Producers, Inc	47
	Rebates on cream manufacturing	50
8.	Milk-settlement plans in the Baltimore market	52
9.	The Cincinnati milkshed	58
	Milk consumption in Cincinnati	60
	Cincinnati Department of Health	61
10.	The cooperatives in Cincinnati milkshed	61
	Introduction	61
	The Cooperative Pure Milk Association	63
	The K. I. O. Milk Producers' Association	67
	Milk Producers' Union, Inc	69
11.	Other marketing agencies in Cincinnati	70
	Independent producers	70
	The Kroger Grocery & Baking Co	70
12.	The Ohio Milk Marketing Commission	71
13.	Cincinnati Sales Association	73
14.	Milk-settlement plans in the Cincinnati market	76
	Cooperative Pure Milk Association	76
	The K. I. O. Milk Producers Association	79
	Practical application of K. I. O. milk-settlement plan	82
	Milk settlements under the Ohio Milk Marketing Commission	85
15.	The St. Louis milkshed	88
	Sanitary requirements	91
16.	Sanitary Milk Producers', Inc	94
17.	Milk-settlement plans in the St. Louis market	95
	Practical application of the base and surplus plan from October 1930 to July 1933	98
18.	Possible effects of relationship between class and blended prices	101
19.	Quantities of milk delivered daily by producers	102

CHAPTER III. DISTRIBUTOR MARGINS AND FACTORS AFFECTING THEM

		Page.
Section 1.	Gross margins by classes of milk	104
	Explanation of terms and methods of computation	104
	Unit margins by classes of milk	106
	Purchases, sales, and margins, by classes of milk	107
	Gross margins per unit on fluid cream	112
	Gross margins on fluid-milk sales	113
	Analysis of total sales distributed by milk classes and products	115
2.	Factors affecting distributor margins	118
	Country receiving station operating costs	118
	Country receiving station allowances and operating costs	120
	Local milk paid for at class III prices while outside cream purchases were reported used for class II purposes	122
	Use of uninspected cream for class II purposes	124
	Use of frozen cream for class II purposes	124
	Adjustment of milk-price differentials	125
	Bulk fluid-milk sales paid for at class III prices	128
	Standardizing milk	129
	Can-washing allowance	130
	City receiving allowance in Boston	131
	Manufacturing chocolate "milk"	121
	Butterfat differentials	132
	Butterfat differentials on other than class I milk	136
	Transportation of milk from farm and country stations to city plants	139
3.	Distributor reports and audits	140

CHAPTER IV.—PROFITS FROM OPERATIONS

Section 1.	Introductory explanations	143
2.	Sales and profits for the month of October 1935	145
3.	Sales, expenses, and profits of the milk divisions of milk companies for the years 1930, 1933, 1934, and 1935	147
4.	Investment, net income, and rates of return	152
	Explanation of terms and bases used	152
	Capital structure as of December 31, 1935	152
	Capital not employed in the milk business	155
	Appreciation not paid for in cash or equivalent	156
	Goodwill paid for in cash	157
	Rates of return of milk and milk-products companies	157
	Return on the total recorded capital	160
	Return on stockholders' investment	160
	Return on capital invested in the milk and milk-products business	162

CHAPTER V. COSTS OF DELIVERING MILK AND RELATED PRODUCTS

Introduction	167
Extent of data gathered and presented	167
Great variety of commodities distributed from retail milk vehicles	168
Assigning delivery expense a complex problem	170
Unit delivery costs of seven milk distributors	172
Lack of data for more accurate assignment of delivery costs	176
Costs of delivering milk and cream on wholesale delivery routes	177

TEXT TABLES

1. Unit margins by classes of milk: Baltimore, Cincinnati, St. Louis, and Boston, October 1935	107
2. Gross profit margin by classes of products sold, one Baltimore company, October 1935	108
3. Gross profit margin by classes of products sold, four Cincinnati companies, October 1935	109
4. Gross profit margin by classes of products sold, three St. Louis companies, October 1935	110
5. Gross profit margin by classes of products sold, one and two Boston companies, October 1935	111

	Page
6. Theoretical and actual gross margins per quart on fluid milk for Baltimore, Cincinnati, St. Louis, and Boston, October 1935	113
7. Sales analysis for Baltimore, Cincinnati, St. Louis, and Boston distributors, October 1935	116
8. Country receiving station operating costs per hundredweight of milk for six distributors in the Boston, Baltimore, and St. Louis markets for the year 1935	119
9. Ratio of milk equivalent of outside cream reported as class II sales to quantities of milk paid for at class III prices	123
10. Relation of profits on sales to returns on investments of four Baltimore and Boston dealers examined	144
11. Combined sales, expenses, and net profits for the month of October 1935 of the milk divisions of 10 companies	146
12. Percentage of operating expenses and net profits from operations to net sales for all milk distributors examined by cities for October 1935	146
13. Comparative statement of the combined total amounts of net sales and expenses of the milk divisions of 11 companies and the ratios of expenses compared to net sales during 1930, 1933, 1934, and 1935	148
14. Statement showing source of capital and nature of combined investments of the 11 milk and milk-products companies examined, as at December 31, 1935	153
15. Statement showing the source of invested capital of milk and milk-products companies examined at December 31, 1935	155
16. Statement showing the nature and proportion of the known outside investments not used in the milk or milk-products business at December 31, 1935	156
17. Statement showing the proportion of investments and appreciation reflected in recorded capital of the 11 companies, as of December 31, 1935	157
18. Comparative statement showing rates of return of milk and milk-product companies examined for the calendar years 1930, 1933, 1934, and 1935, based on the total capital as recorded by each company	160
19. Comparative statement showing rates of return of milk and milk-product companies examined for the calendar years 1930, 1933, 1934, and 1935, based on stockholders' investment as recorded by each company	161
20. Comparative statement showing rates of return of milk and milk-product companies examined for the calendar years 1930, 1933, 1934, and 1935, based on stockholders' investment as adjusted by the commission to eliminate appreciation	162
21. Statement showing the proportion of investment of milk and milk-product companies in outside investment, goodwill, and tangible investment in the milk business at December 31, 1935	163
22. Rates of return on the milk and milk-products business	163
23. Comparative statement showing rates of return of milk and milk-product companies examined for the calendar years 1930, 1933, 1934, and 1935, based on the recorded capital in the milk and milk-products business	164
24. Comparative statement showing rates of return of milk and milk-product companies examined for the calendar years 1930, 1933, 1934, and 1935, based on the capital invested in the milk and milk-products business, after eliminating all appreciation	165
25. Comparative statement showing rates of return of milk and milk product companies examined for the calendar years 1930, 1933, 1934, and 1935, based on the capital invested in milk and milk-products business after eliminating all appreciation and goodwill	166
26. Commodities delivered on retail routes by milk distributor C, and total and unit-delivery expense thereof, by commodities and sizes of package, October 1935	168
27. Seven milk distributors' expenses per sales unit and per quart equivalent of delivering milk and cream on retail routes by sales units, October 1935	173
28. Seven milk distributors' expenses per sales unit and per quart equivalent of delivering milk and cream on wholesale routes, by sales units, October 1935	178

APPENDIXES

Page

A. Description of plan for paying producer members of Consolidated Dairies, Inc. 181
B. Uniform prices for 3.7 milk, by zones, February 9–15, 1936, for the Greater Boston marketing area 183
C. Agreement between the Cincinnati Sales Association and milk distributors 184
D. The Consumers' Milk Commission of St. Louis 189
E. Provisions of Boston milk license regarding classification of milk, effective date May 1, 1935 193
F. Provisions of St. Louis and Boston milk agreements and licenses regarding distributor reports and audits 194
G. Methods of allocating delivery costs to products 198
Stop-point method of distributing retail delivery costs to products by distributor 1 200
Stop-point method of distributing retail delivery costs to products as applied by distributor 2 212
Method used by distributor 3 to distribute retail delivery costs to products 219
Distributing delivery costs to products by use of commission points and weighted sales units 222
Package and cubic space method of distributing delivery costs applied to cost and sales data of distributor 2 227

LIST OF APPENDIX TABLES

A. Expenses other than raw materials expressed as percentage of total expenses 198
B–1. Distributor 1: Stop-point method of computing modified units to be used in distributing delivery costs by products (retail route sales, October 1935) 201
B–2. Distributor 1: Stop-point method of distributing delivery costs to products (retail route sales, October 1935) 203
B–3. Distributor 1: Computation of final unit costs (retail route sales, October 1935) 206
C. Percentage reductions in units of sale by several modifications 208
D. Distribution of supervision, and indirect item of expense, to retail and wholesale delivery 209
E. Unit values or weights to be assigned to products in distributing, selling, and administrative costs to products as proposed by the International Association of Milk Dealers compared to those used by distributor 1 211
F–1. Distributor 2: Stop-point method of distributing delivery costs by products (retail route sales, October 1935) 213
F–2. Distributor 2: Stop-point method of distributing delivery costs to products (retail route sales, October 1935) 216
G. Distributor 3: Distributor's method of distributing delivery costs to products (retail route sales, October 1935) 220
H. Distributor 4: Distributor's method, distributing delivery costs to products by use of commission points and weighted sales units (retail route sales, October 1935) 223
I. Package and cubic space method of distributing delivery costs applied to cost and sales data of distributor 2 (retail route sales, October 1935) 230
1. Country receiving station allowances and operating costs compared, year 1935 232
2. Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1930 234
3. Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1933 234
4. Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1934 235

Page

5. Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1935 235
6. Distributor A: Retail and wholesale delivery expenses and their division with reference to bases of distribution to products delivered, October 1935 236
7. Distributor B: Retail and wholesale delivery expenses and their division with reference to bases of distribution to products delivered, October 1935 237
8. Distributor C: Retail and wholesale delivery expenses and their division with reference to bases of distribution to products delivered, October 1935 238
9. Distributor D: Details of "selling expense" and allocation of details to selling expenses, retail delivery expense, wholesale delivery expense and other subclassifications 238
10. Distributor E: Details of "selling expense" and their allocation to sales expense, retail delivery expense, wholesale delivery expense and miscellaneous charges 239
11. Distributor F: Retail and wholesale delivery expenses, and their division according to bases of distribution to products delivered, October 1935 240
12. Distributor G: Retail and wholesale delivery expense and their division with reference to bases of distribution to products delivered, October 1935 241
13. Seven milk distributors' expense per sales unit and per quart equivalent of delivering milk and cream on retail routes, by sales units, October 1935, (computed without assigning to transportation expense any part of drivers' and chauffeurs' compensation) 242

REPORT OF THE FEDERAL TRADE COMMISSION ON MILK-MARKET REGULATION AND PRACTICES OF DISTRIBUTORS IN RELATION TO MARGINS, COSTS, AND PROFITS OF DISTRIBUTORS IN BOSTON, BALTIMORE, CINCINNATI, AND ST. LOUIS

Chapter I. Introduction and Summary

Section 1. Origin and Scope of Inquiry

This report on milk-market control and margins, costs, and profits of distributors in Boston, Baltimore, Cincinnati, and St. Louis is submitted to the Congress in further response to House Concurrent Resolution 32, Seventy-third Congress, second session. This report does not cover the operations of all the distributors in the markets named above. It contains, in addition to some discussion of control measures, an analysis of the unit margins, costs, and profits of certain distributors, and of the milk-settlement plans used in paying producers. A number of practices engaged in by these distributors which have a decided effect upon their margins are also shown. A comparison of methods of allocating delivery expenses to products is presented, with some critical comment upon their value.

It is believed the report will prove of value to those entrusted with formulating milk-marketing control measures and that officials administering control acts will likewise find it helpful.

Section 2. Summary of Report

Important facts developed by the inquiry and discussed in this report may be summarized as follows:

1. The Boston milk-market production shed roughly comprises the States of Massachusetts, Vermont, New Hampshire, and Maine. Of Boston milk receipts in 1935 Vermont supplied about 60 percent and Massachusetts about 14 percent.

Approximately 70 percent of the Boston milk supply is controlled by one cooperative federation, New England Dairies, Inc. The dominant member unit is the New England Milk Producers Association, a bargaining organization with over 20,000 members, only 4,000 of whom are located in Massachusetts.

Early in 1934, 30 distributors handled 90 percent of the milk supply for the Greater Boston market, another 30 handled 6 percent, and the remaining 4 percent was handled by approximately 575 distributors, a large proportion of whom were producer-distributors. The Commission found that in 1935 the two largest Boston distributors handled 63 percent of the class I milk sales in the Greater Boston market. Under the supervision of the market administrator, who is

in charge of the Agricultural Adjustment Administration's regulations, most of the producers in the Boston milkshed were paid on a base-rating plan of milk settlement. A sufficient number of producers, however, in that area were selling milk on a flat price basis to cause considerable disturbance in the retail and wholesale market.

The Massachusetts milk-control law, creating a milk-control board, became effective July 3, 1934. Among its other activities it has set a schedule of resale prices for milk and milk products in the Boston market, the schedule being determined on the basis of meetings with distributors. It is reported that in 1935 about 15 percent of the milk shipped to Boston was sold below such schedule prices.

Conditions in the Boston market have long been unstable, according to report, and while the efforts of the Federal Market Administrator and the Massachusetts Board of Milk Control have done much to improve conditions in that milkshed, there continues to be widespread dissatisfaction among producers, especially those in the State of Massachusetts. It is pointed out that one of the problems confronting control authorities in this milkshed is that of reconciling the demands of different groups of producers, both organized and unorganized, located in Massachusetts and in other parts of the milkshed.

2. The history of the Baltimore milk market is one of peace and quiet as compared with most of the metropolitan markets of the country which have been examined. This may be ascribed in part to the fact that the one cooperative in this shed has by shrewd management succeeded in minimizing the price and surplus problems. In part it is due to the comparatively few milk distributors operating in the Baltimore sales area, which situation is probably to some extent the result of the success in the handling of the price and surplus problems. In that market the importance of maintaining proper relationships between class and blended prices is fully recognized.

One company, at the time of the inquiry, sold approximately 55 percent of the fluid milk going to the Baltimore market and the next largest distributor handled approximately 11 percent.

The Maryland Cooperative Milk Producers, Inc., the only cooperative association in the Baltimore area, controls the bulk of all milk going into the Baltimore sales area. It acts as sales agent for approximately 3,400 producer members. Reorganized in 1918 the association has become one of the leading milk-marketing cooperatives in the country. The association has built up a substantial reserve fund through brokerage deductions, which in 1931 amounted to approximately $900,000. The purpose of the fund is to strengthen the association's bargaining position with the distributors and to enable it at all times to take care of all milk produced by its members regardless of any contingency that may arise. All butterfat testing is done by an independent laboratory, maintained jointly by the producers' association and the distributors. This practice has removed one source of ill will that often disturbs relations between producers and distributors.

The Maryland Cooperative Milk Producers, Inc., is a pioneer in the use of the base and surplus plan of milk settlement, having used it successfully since 1918. At the time of the inquiry the distributors buying from the association were paying 23 cents per

gallon of 4-percent milk for all their class I and II sales. The producer members of the association were being paid, however, on a base rating plan. The association sells all of the surplus milk of its members at the best possible market price obtainable, largely in the form of 40-percent cream. The processing of the surplus is done by distributors acting as agents for the association. One company, which owns 15 of the 16 country receiving stations in the shed, did substantially all of the processing. This method of handling surplus is regarded as a highly satisfactory business arrangement by both the association and the distributing company doing most of the processing. Approximately 20 percent of the earnings in 1935 of the distributor doing practically all the processing was derived from handling surplus milk for the account of the association.

3. The history of the Cincinnati market is one of conflict between producers and distributors. The producers have organized cooperative associations and the distributors have opposed these associations. This opposition developed into a refusal of distributors to purchase milk from one of the earlier organizations later to become the Cooperative Pure Milk Association, whereupon the association purchased the largest milk distributing plant in the city in an attempt to provide an outlet for the milk produced by its members.

About the time the distributing plant was purchased by the association, many of the other producers in the market were loosely organized as the K. I. O. Milk Producers Association, but it appears that in its earlier history this association was dominated by distributors and that the producers were forced to accept prices and base and surplus ratings determined largely by the distributors.

Prior to 1931 the Cooperative Pure Milk Association appears to have had no definite payment plan but settled with its members either at a flat price or on the basis of the utilization of the milk. In 1931 a percentage of each member's total production each month was designated as his base. Since 1932 the members have been paid according to the utilization or classes in which the milk was sold to the consumers.

The members of the K. I. O. Milk Producers Association were paid on a flat price basis until early in 1925, and from that time until 1930 they were paid on a base and surplus plan. Since 1930 the association members have been paid on a base surplus and utilization plan.

Early in 1933, a third association, the Milk Producers Union, Inc., was formed and immediately met with the opposition of distributors, who refused to purchase milk from the association members. The association thereupon purchased a creamery and sold the product of its members in the form of butter. The distributors then began to purchase milk from the association. Since the association disposed of its creamery, its members' milk has been sold on a base-surplus and utilization plan.

The Ohio Milk Marketing Commission came into the market in the fall of 1933 and is reported to have had a decidedly stabilizing effect upon the market. It effected a definite base and surplus plan of allocating milk received from producers and established a system whereby producers were to be paid for base milk according to its utilization.

The Ohio Milk Marketing Commission went out of existence July 1, 1935. The Cincinnati Sales Association was immediately formed by distributors and representatives of two cooperatives to act as sales agents for the producer members of these two cooperatives. A group of producers, not members of any cooperative, also sell their milk through the sales association. This association has an agreement with most of the larger distributors in Cincinnati whereby the latter agree to resell milk at stipulated prices, within the Cincinnati sales area, and also to refrain from doing certain things set forth in a list of so-called unfair trade practices.

4. The St. Louis milkshed is a surplus-milk-producing area. For the period from March 1934 to September 1935, inclusive, of the 669,472,327 pounds of milk handled by St. Louis distributors 42.1 percent was sold as class III or surplus. The large milk surplus available has tended to maintain a closer relationship between class I prices and the price of butterfat than in most of the metropolitan milk-marketing areas in the United States studied by the commission.

The Sanitary Milk Producers, Inc., a producer cooperative, acts as sales agent for approximately 12,900 members. It has been operating since 1930 and claims to control approximately 70 percent of the milk shipped to St. Louis.

It was stated to members of the Commission's staff that prior to 1934 the milk supply of St. Louis was unclean and contained a high bacteria count. Since the new ordinance was approved providing for more adequate inspection of farms, the general quality of the milk as received from producers has been greatly improved.

Prior to October 1, 1930, a flat price method of paying producers was used by St. Louis distributors. With the advent of the Sanitary Milk Producers, Inc., in 1930, the base and surplus plan was adopted.

The base and surplus plan was dropped by the Sanitary Milk Producers in 1934, and a market pool price plan was adopted under the supervision of the Federal market administrator. Under this arrangement all distributors paid producers the same price for milk, f. o. b. St. Louis, the price being determined by the market administrator on the basis of reports made to him by the distributors. At the time of the inquiry the St. Louis market was using an individual dealer pool plan of paying producers.

5. Prior to the organization of the Ohio Milk Marketing Commission, which began operations October 1933, Cincinnati distributors had practically complete control over milk settlements with producers. The class I price was supposed to be paid for 60 percent of each producer's base, and the class II price for 40 percent. The class III prices were to be paid for all milk delivered in excess of their respective bases. The theory was that the total of 60 percent of producer bases was to approximate the class I sales of distributors and the total of 40 percent of bases was to approximate class II sales. Producers who delivered less than their respective bases received the class I price for 60 percent of the milk *delivered*, and the class II price for 40 percent of the milk *delivered*. To the extent that producers failed to deliver their respective basics, the distributors were able to use, for class I and II sales, deliveries in excess of their bases made by other producers, the excess being paid for at class III prices. As a result of this practice milk producers were underpaid. If the underpayment is computed on the basis most

favorable to them (and the least profitable to the distributors), the number of quarts of milk which the distributors used for class I sales but paid for at class III prices was 1,425,367 for the period 1931 through September 1933. On the basis least favorable to producers (and most profitable to distributors) the number of quarts involved was 3,395,743. In addition the Cincinnati distributors also used, in the same period, 1,723,255 quarts of milk for class II purposes for which they paid the class III price, calculated on the basis most favorable to producers. In other words, no matter which method of settlement was used by the distributors, the producers lost. (See ch. II, sec. 14).

6. Prior to the entrance of the Agricultural Adjustment Administration into St. Louis, distributors determined the quantity of milk to be paid for at the class I price by applying a percentage to each producer's base, which was calculated each month, by dividing class I sales by total producer basics. As the distributors included the basics of producers who did not deliver milk during the month in the percentage calculation, it is obvious that the application of the calculated percentage would result in less milk being paid for at the base price than was sold as class I. Furthermore, to the extent that producers failed to deliver their respective basics, the distributors were able to use, for class I sales, deliveries in excess of their basics made by other producers and paid for at the surplus prices. Two distributors, during the year 1932 and the first 6 months of 1933, paid surplus milk prices for 2,392,369 quarts of milk which they had sold in bottles. (See ch. II, sec. 17.)

7. The excess of the class I price over the blended price was the greatest in the case of Boston, 1.58 cents per quart, and the least for Baltimore, 0.78 cent per quart, with St. Louis occupying an intermediate position with 1.11 cents per quart. Boston also showed the largest excess of the blended price over the class II price, 2.37 cents per quart, while Baltimore was only 0.67 cent per quart and St. Louis only 0.6 cent per quart. The significance of these figures lies in the fact that they may be closely related to conditions in the three milksheds. In Baltimore, where the relationship is narrow, market conditions are reported to be remarkably stable, while in Boston and St. Louis the reverse appears to be true. (See ch. II, sec. 18.)

8. The use of the term "spread" to illustrate the amount retained by milk distributors to cover their operating expenses and profits, when this amount is calculated by subtracting from the retail price of a quart of milk sold on routes the per quart class I price paid to producers, was criticized in a previous report issued by the commission on December 31, 1935. In that report such a calculation was termed a "rough and ready" method which "falls far short of telling the real story." For example, in calculating a spread, or gross margin, by the rough and ready method for Baltimore gives a result of 6.26 cents per quart for fluid milk or about 20 percent greater than the actual margin realized by distributors in that city of 5.21 cents per quart. A similar discrepancy occurs in the case of margins for Cincinnati distributors, the spread by the rough and ready method (6.84 cents per quart) being about 16 percent greater than the actual margin (5.90 cents per quart).

The actual gross margins per quart on all milk products sold by the distributors covered by the inquiry during October 1935, were 5.02 cents for Baltimore, 4.28 cents for Cincinnati, 3.41 cents for St. Louis, and 3.35 cents for Boston. These figures reflect such factors as varying percentages of fluid milk and fluid cream sold in bottles and in bulk on retail and wholesale routes at different prices, and of other milk products made and sold as well, deductions from producers to cover country receiving station operating costs and freight and cartage, actual costs of transportation from country plants to city processing plants, purchase and use of outside cream and other manufactured or partly manufactured material, and milk purchased from producers at butterfat differential prices. (See ch. III, sec.1.)

9. Two large Boston distributors added cream to milk purchased to raise the butterfat content of the latter. In determining the quantities of milk to be paid for at class I prices, however, the distributors deducted the number of quarts of added cream from total class I sales. This practice resulted in 315,981 quarts of producers' milk being paid for at class II prices instead of class I prices during the 9 months beginning in June 1935. Returns to producers were depressed by $13,184.71, which is equivalent to 4.17 cents per quart on the 315,981 quarts involved. (See ch. III, sec. 2.)

10. Boston distributors deducted 0.215 cents per quart from producers on all milk shipped from farm direct to city plants. Boston was the only one of the four cities covered by the inquiry where such a deduction was allowed. This charge was given the distributors to cover handling costs for receiving milk at city plants. (See ch. III, sec. 2.)

11. Butterfat differentials paid by Boston, Cincinnati, and St. Louis distributors were approximately 50 percent of the respective per pound class I prices for basic quantities of butterfat, while the differentials in Baltimore were between 70 and 90 percent of the per pound class I price for the basic quantities of butterfat. Differential prices for butterfat are especially significant, because producers are paid on the basis of the butterfat content of their milk. The percentage of total butterfat in fluid milk sales (class I) that were paid for at butterfat differential prices in Boston and St. Louis, 5.37 and 3.40 percent, respectively, were higher than the corresponding percentage of 1.98 percent in Baltimore during the year 1935. Cincinnati distributors paid the butterfat differential price for 7.08 percent of the butterfat in Class I sales during the first 6 months and 3.80 percent during the last 6 months of the year 1935. (See ch. III, sec. 2.)

12. Margins of milk distributors operating country receiving stations are affected by any allowances made to cover the cost of operating such stations, or, of course, by the lack of any such allowances. The distributors in St. Louis were not given an allowance to cover the cost of operating their stations, which, for the companies covered was 12.814 cents per hundredweight on all milk handled by their stations. The cost of operating country stations by the Boston distributors, however, was offset by an allowance, so that a gain of 0.702 cent per hundredweight was realized on all milk so received. In the Baltimore market, the allowance on all milk delivered to country receiving stations exceeded the cost of operating such stations by 12.185 cents per hundredweight. (See ch. III, sec. 2.)

13. Another factor affecting margins of milk distributors is the difference between the cost of hauling milk from country points to city plants and the charges collected from producers for this service. In Boston the difference amounted to 0.263 cent per quart on milk hauled by the distributors covered by the inquiry, the largest difference of all four markets. In St. Louis, the result was a loss to the distributors equal to 0.131 cent per quart. Cincinnati distributors profit to a slight extent, 0.032 cent per quart, while for Baltimore the gain, 0.233 cent per quart, more nearly approximated that for Boston.

The foregoing sums may seem insignificant as thus expressed on a quart basis. When, however, the amounts are related to the gross margins and particularly net profit per quart, the result is a figure which is far from insignificant. (See ch. III, sec. 2.)

14. Among the practices engaged in by some St. Louis distributors, both in the past and at the time of the inquiry, which have operated to depress returns to milk producers are the following:

(*a*) The adjustment of reports to the market administrator during 8 months of 1935, so as to obtain freight deductions on 4,854,275 quarts of milk in excess of the deductions which should have been made. The returns to producers whose milk was involved were lower by $24,694.86 than they should have been. The gain to distributor and the loss to producers amounted to one-half cent per quart. (See ch. III, sec. 2.)

(*b*) One large St. Louis distributor put cream, made from milk paid for at class III prices, into storage during May, June, and August 1935. Some of this cream was taken out of storage during October 1935, and January 1936, and reported used for class II sales. This practice forced an equal quantity of milk into class III. Returns to producers were depressed by $4,389.50 as a result. (See ch. III, sec. 2.)

(*c*) Two large St. Louis distributors reported substantial quantities of uninspected cream used for class II sales. The use of this uninspected cream had the effect of 12,992,518 quarts of local producers' milk being paid for at class III prices instead of class II prices during the period from March 1934 through December 1935. Returns to producers were thus depressed to the extent of $96,770.56, this being equivalent to practically three-fourths of a cent per quart on this quantity of milk. (See ch. III, sec. 2.)

(*d*) Three large St. Louis distributors paid class III prices for 2,241,093 quarts of milk sold as bulk fluid milk from March 1934 through February 1935. Returns to producers were thus depressed to the extent of $45,793.76, which amounted to over 2 cents per quart on the milk involved. This was contrary to the intention of the milk license. As the extent of the practice increased during the period mentioned the later license was changed so as to specifically prohibit the practice. (See ch. III, sec. 2.)

15. Distributors' reports and adequate audits of milk utilization are essential to most of the milk-settlement plans found in use. Thorough audits are not made in the four cities covered by the inquiry. Distributors cannot be compelled to open their records to cooperative associations. Court decisions have made distributors

72440—36——2

less willing to allow inspection of their records by Federal milk-market administrators. In St. Louis, Cincinnati, and Boston, distributors have in the past engaged in numerous practices inimical to the interests of producers which an adequate audit would have discovered. There is considerable improvement in the conditions, however, insofar as Boston and Cincinnati are concerned. St. Louis distributors, however, continue to engage in practices specifically prohibited by the Federal license and other practices contrary to the spirit of the license. The Baltimore arrangement between the cooperative and the distributors apparently is satisfactory to both parties. (See ch. III, sec. 3.)

16. Some of the companies examined had investments in marketable and other securities and a considerable amount of property not employed in the milk business. Such outside investments were equivalent to over 19 percent of the total investments at the close of 1935. Goodwill, which had been paid for, amounted to about 10 percent, and the remainder represented physical properties and net current assets employed in the milk business. Some of these companies had also recorded a considerable amount of unrealized appreciation, with the result that the aggregate recorded capital of all of these companies at December 31, 1935, was $33,680,817, of which only $29,221,524 represented actual invested and borrowed capital.

The capital structure of these companies at December 31, 1935, included a relatively small amount of borrowed capital and an unusually large proportion of undistributed earnings, as will be seen by the following tabulation:

Dec. 31, 1935:	
Preferred stock, less appreciation	$5,558,416
Common stock, less appreciation	8,782,315
Surplus, less appreciation	11,915,113
Long-term debt	2,965,680
Total (less appreciation)	29,221,524
Appreciation	4,459,293
Total recorded capital	33,680,817

Surplus or reinvested earnings of $11,915,113 was equivalent to 40.78 percent of total capital, less appreciation.

Some of these companies were engaged exclusively in the distribution of milk and cream, whereas others operated not only milk divisions but also ice cream and butter divisions, condenseries, stores, restaurants, and bakeries. Operations of their milk divisions are referred to for comparative purposes, because they were limited to the regular milk and cream business and a relatively small amount of other products.

The combined net sales of the milk divisions of the 11 companies examined dropped from $68,666,465 for 1930 to $36,862,044 for 1933, and then increased to $47,872,702 for 1934 and $51,108,872 for 1935.

The relative changes during recent years in the investment, net sales, and net income pertaining to the entire milk business excluding above-mentioned activities other than the distribution of milk and cream may be illustrated by such data for four of the companies examined, two of which are located in Baltimore and two in Boston. Their combined investment in the milk business during 1935 was only 90 percent of the total for 1930. Their combined net sales for 1933

were only 66 percent of 1930 sales, and their sales for 1934 and 1935 were, respectively, only 72 percent and 79 percent of their 1930 sales. Their combined net income for 1933 was 61 percent of their 1930 net income and for 1934 only 24 percent, but their net income for 1935 was 50 percent of their 1930 net income.

As might be expected, when the sales of these companies dropped so radically and facilites were not utilized to capacity, their total expenses were not correspondingly reduced.

During the last 3 years, the margin of profit on their sales was also much less than for 1930. For that year the margin of profit on net sales was 7.02 percent, whereas for 1933 it was 6.47 percent and for 1934 only 2.34 percent. For 1935, it was only 4.44 percent, a rate nearly 37 percent less than for 1930.

The foregoing reductions are all closely related in their effect upon the net returns earned by these companies on their investments. Their composite average return on investments in the milk business dropped from 21.9 percent for 1930 to 14.6 percent for 1933 and only 6.1 percent in 1934. For 1935 it was 12.2 percent, due principally to increases in both the volume of sales and margin of profit thereon.

Such spreads differ among the dealers according to the nature of the products handled, their proportionate part of total sales, and the efficiency of operation, as well as upon the prevailing prices paid and received for milk and various products.

The gross margins within which the dealers examined operated during the month of October 1935, were as follows:

	Percent of net sales
1 Baltimore company	48.71
4 Cincinnati companies	51.45
3 St. Louis companies	43.65
2 Boston companies	42.36

The average margins for all of the companies examined in four cities varied during the 4 years covered as shown by the following tabulation:

	Percent of net sales
1930	43.1
1933	48.9
1934	43.2
1935	42.3

Delivery and selling expenses are the most important classes of expense and the one that showed the most variations absolutely during these years among all the companies examined as will be seen by the following tabulation by cities of such expenses in relation to net sales:

Year	Baltimore	Cincinnati	St. Louis	Boston
	Percent	*Percent*	*Percent*	*Percent*
1930	20.6	28.1	26.5	21.9
1933	29.3	35.6	36.2	28.0
1934	27.0	31.7	32.8	27.9
1935	25.6	30.8	34.2	26.1

For most of the companies examined, labor costs included in delivery expenses were reduced during recent years proportionately as much or more than the total of such expenses.

For the purposes of information and comparison, rates of return on investment have been calculated on several bases, with varying results, which may be illustrated by the following statement of composite average rates for the 11 companies examined on different bases for each of the years 1930 and 1935:

Investment bases used	1930	1935
	Percent	*Percent*
Total capital as recorded by the companies	14.87	7.78
Stockholders' investment as recorded	15.21	7.88
Stockholders' investment as adjusted by the Commission	24.98	13.28
Investment in milk business as recorded	15.69	8.21
Investment in milk business as adjusted to remove appreciation	25.58	14.90
Investment in milk business as adjusted to remove appreciation and goodwill	34.31	19.27

A comparison of the rates of return earned by the same companies grouped according to the cities in which they are located, is given in the tabulation below. The returns shown are based on the net income from the milk business and the actual investment therein, which does not include appreciation recorded on the books of some of these companies.

	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
2 Baltimore companies	25.6	18.1	14.0	14.9
4 Cincinnati companies	13.1	[1].02	8.5	10.0
3 St. Louis companies	19.4	3.7	.5	[1] 2.8
2 Boston companies	20.5	13.3	3.3	11.4

[1] Indicates loss.

The returns on investments as shown above for the companies examined were relatively high on the average for a business of this nature. Four of these companies lost money during one of the last few years, but most of them realized substantial returns during 1935 on actual investments in the milk business. These substantial returns are especially significant as a considerable proportion of the actual capital was derived from invested earnings.

17. As many as 19 different classes and grades of milk, cream, butter, buttermilk, cheese, eggs, and other commodities are carried on, and delivered from the same milk vehicle in as many as 63 sizes and shapes of package.

Data on costs of delivering this great variety of commodities and packages were collected from seven milk distributors. Among them, they used four essentially different methods of dividing the total retail route delivery expense among these commodities and sales units. It is believed that all four methods were incorrect in some important respect. The Commission applied to the data obtained from all distributors a uniform method of assigning delivery expense, which, it is believed, while not perfect, gives a much closer approximation to the true costs of the respective packages than does any of the methods used by the distributors.

ERRATA

(To be inserted at page 10 of House Document 501, 74th Cong., 2d sess.)

Line 4 of second paragraph on page 10 should read "2 Baltimore companies" instead of "11 companies."

Line 1 of third paragraph on page 10 should read "11" instead of "the same."

101439—36

U. S. GOVERNMENT PRINTING OFFICE: 1936

The lowest cost found of delivering a quart bottle of whole milk (or buttermilk, or cream, or any other commodity in quart bottles) in October 1935 was 2.64 cents, but much of this business was wholesale. The highest cost was 4.78 cents. Four of the seven distributors had retail delivery costs as great as 4.42 cents, or more, per quart delivered in quart bottles.

For the distributor whose cost of delivering milk in quart bottles was 4.42 cents per quart, the cost of delivering milk or cream in pint bottles was 3.28 cents per pint, and of delivering them in half-pint bottles was 2.77 cents per half-pint.

Expressing all ordinary pasteurized milk as delivered in equivalent quarts, the average delivery cost ranged from 2.83 cents to 4.97 cents per quart. Expressing all sweet cream as delivered in half pints, the average cost of delivering cream ranged from 1.45 cents to 2.88 cents per half pint.

An important cause of the large differences between the unit delivery costs of the seven distributors was the difference between the rates of remuneration to the route operatives and between the amounts of service received for such remuneration. The distributors with the higher costs paid guaranteed wages of $36 or $37 per week of 6 days, in return for which not more than a certain union-prescribed amount of service was received. Service rendered in excess of this prescribed amount received extra compensation at the rate of $\frac{4}{10}$ cent per quart of milk (for example) in one milkshed and of 1 cent per quart in another milkshed. The distributor with lowest delivery cost paid a very small guaranteed weekly wage and determined the great bulk of the route operatives' remuneration in the form of a commission equal to 7 percent of the net sales value of the products delivered by them. In consequence, these operatives gave more service for a smaller total monthly compensation than the operatives of the other distributors.

The results of the present inquiry again show the importance of logical methods of distributing delivery costs to the products, accurately and uniformly applied. Otherwise, as appears from the results of this inquiry, methods may readily be designed to misrepresent these costs and to show them high on certain products and low on others, or vice versa. With delivery costs accounting for approximately 60 percent of the total operating expenses, it is apparent that a method of distributing costs to certain products out of proper proportion to their true costs may cause such products to show only a slight profit or even a substantial loss. This has been found true in several instances, according to the distributors' records.

Misrepresentation of costs in this manner may react adversely to the interests of not only the producer and consumer but also of the distributor. In view of such conditions it appears desirable that the industry should take under advisement a comprehensive study for the purpose of devising a method that will present the costs logically and with all probable accuracy, so that the criticism now directed toward various accounting practices may be eliminated. (For a discussion of some of the methods used to distribute delivery costs to products see appendix G.)

By direction of the Commission.

CHARLES H. MARCH,
Chairman.

JUNE 4, 1936.

SECTION 3. DIFFICULTIES OF CONTROLLING THE MARKETING OF MILK

The problems confronting the control agencies set up by the Federal and State Governments in order to cope with the crises arising in practically every milkshed in the country shortly after the beginning of the depression were of a complexity that can be fully appreciated only by those acquainted with the intricacies of the milk-distributing system.

It would be easy to criticize many features of these attempts of State and Federal authorities to regulate the milk industry, but much of any such criticism would disregard the difficulties under which control authorities labored. Beset on all sides by demands for immediate action, it was often necessary for the control authorities to make decisions without the investigation or consideration which the importance of the situation warranted. When it is realized that in nearly every milkshed in the country the control authorities found a steadily increasing supply of milk and a declining rate of consumption, coupled with the demands for lower prices by consumers, for higher prices by producers, and for adequate margins by distributors, some faint idea of the problems of control becomes apparent. Furthermore, few realize the effect upon the milk-marketing structure of the low prices to which milk fell.

In this report, as in earlier reports submitted to Congress by the Commission on the subject of milk distribution, it has been necessary for the Commission to discuss activities of milk distributors which were in violation of either the letter or the spirit of the control measures under which they were operating, or their agreements and understandings with the producers of milk. It is possible that, if carelessly read, the reports may give the impression that the Commission found there has been little accomplished by any of the attempts to regulate the milk industry in the past few years. The Commission believes that any such impression should be dispelled.

Despite any mistakes the Federal and State control authorities in the markets investigated by the Commission may have made, the Commission believes that the benefits from control to the producers in these areas have outweighed the abuses that at times have occurred. Furthermore, the instances of violations presented in the Commission's reports are quite likely insignificant compared to the total benefits resulting to the milk industry from the various control measures. This statement must not be construed as an approval of many of the provisions contained in the many control measures or of all attempts on the part of the control authorities to enforce these measures. As a matter of fact the Commission believes that some of the measures taken in certain of the milksheds of the country were, to say the least, unsound.

The Commission is not in a position to express any broad conclusions or to make any broad recommendations in respect to control measures of the past or those that may be devised in the future. Only a few of the milksheds of the country have been covered by the investigation. The Commission does believe, however, that until a thorough analysis has been made of the control measures of the past and, more important still, of the vast multitude of artificial barriers which have been built up among the milksheds of the country, no satisfactory plan for distributing milk throughout the country under a system of control can be devised which will insure a fair opportunity to all concerned.

CHAPTER II. DESCRIPTION OF MARKETS, COOPERATIVE ASSOCIATIONS, AND REGULATORY AGENCIES

SECTION 1. THE BOSTON MILK SHED

The Boston milk market production shed roughly comprises the States of Massachusetts, Vermont, New Hampshire, and Maine. Only 6.72 percent of Massachusetts milk production in 1934 was shipped to Boston; several secondary markets in the State draw on local milk so that the requirements of Boston are obtained chiefly from without the State in which it is located.

In 1934 the New England States shipped 757,000,000 pounds of milk to Boston, about 78 percent of its total milk and cream receipts. Although there is an adequate supply of fluid or class I milk for Boston right in its own producing shed, New England is a deficit cream area; over 20 percent of cream shipments come from the West.

Every year from 1930 to 1934 each State maintained about the same proportion of total New England milk shipments to Boston, regardless of the volume of actual shipments. But a rather noticeable shift in receipts of milk from Vermont and Massachusetts occurred in 1935 when Massachusetts supplied 13.7 percent of the milk received from the New England area, as against 9.8 percent in 1934,[1] whereas Vermont shipments were 59.6 percent in 1935 and 63.3 percent in 1934. Total Boston milk receipts from New England in 1935 declined 2.9 percent from 1934 and total receipts of milk from all sources declined 0.7 percent.[2]

According to the United States Department of Agriculture [3] cash milk income in the States comprising the Boston milkshed declined 35.9 percent from $85,521,000 in 1929 to $54,821,000 in 1932, and 39.8 percent to $51,505,000 in 1933. Milk income was $57,490,000 in 1934 or 11.6 percent above 1933. Cash farm income declined 47 percent from $244,515,000 in 1929 to $121,458,000 in 1932, and then rose to $139,504,000 in 1933 or 4.9 percent over 1932. Farm income in 1934 was $129,257,000, which was 7.3 percent below 1933 but 6.4 percent over 1932.[4] Cash milk income in 1934 was 32.8 percent and cash farm income 47.1 percent below 1929.

Each year from 1929 through 1932 farmers in this area apparently became more dependent upon dairying for a livelihood; the propor-

[1] Boston receipts of milk from Massachusetts in 1935 were 35.3 percent higher than in 1934. The total milk receipts from the entire shed, however, were lower in 1935 than in 1934.

[2] Cream shipments from Massachusetts and New Hampshire to Boston remained fairly constant throughout the 6-year period. About 0.5 percent was received from Massachusetts and about 6 percent from New Hampshire each year. Receipts from Maine declined greatly from 22.4 percent of New England cream shipments to Boston in 1930 to 13.3 percent in 1934 and 12.4 percent in 1935. Actual cream shipments from Vermont to Boston increased 16 percent from 1934 to 1935, whereas milk shipments decreased 8.57 percent. Total cream shipments from the New England shed to Boston increased 14.4 percent during 1935, but total cream receipts at Boston from all sources declined 5.4 percent. It appears that the increase in milk production in Massachusetts had considerable effect on forcing 1935 Vermont shipments into cream use rather than fluid milk.

[3] Division of Crops and Livestock Estimates, Bureau of Agricultural Economics.

[4] In all States in this area, except Maine, where farm income declined almost 30 percent, farm income was slightly larger in 1934 than in 1933.

tion of milk to farm income increased from 35 to 45 percent during this 4-year period.[5] Cash farm income for the 6-year period, 1929–34, was lowest in 1932 and cash milk income was lowest in 1933.

In each State in the Boston area, milk income increased about 11 percent during 1934. Milk prices showed increases almost as large in each State except Vermont, in which prices increased 17 percent.

During 1933 and 1934 increases in farm income in each State (except in Maine in 1933) was considerably below increases in prices paid farmers for their products.[6] The rise in income may be attributed to increased prices.

While all land in farms increased slightly between 1930 and 1935, the average number of acres per farm decreased about 10 percent from 116 to 104 acres for the area. Massachusetts farms had the largest increase in number and the largest decline in the average size of farms during the period and was the only State in the area in which the average size of herds declined from 1930 to 1935.[7]

About 25 percent of the feed of milk cows during a year is obtained from pasture in Massachusetts, 30 percent in Maine and New Hampshire, and 34 percent in Vermont.[8] Most of the dairy farms in Vermont raise all the roughage and purchase most of the concentrates for their cows. In Maine, dairying centers in the southern part of the State. Along the Connecticut River in New Hampshire, dairying is the most important source of farm income.

The Greater Boston sales area corresponds roughly to metropolitan Boston, which had a population of 1,924,642 in 1930.[9] It is essentially an industrial and commercial center; its value of products manufactured in 1932 totaled $704,875,376.[10] Half the manufacturing establishments in Massachusetts are located in metropolitan Boston.[11]

Number and type of distributors in Boston market.—Prior to 1934, according to records in the market administrator's office [12] 30 distributors handled 90 percent of Greater Boston's total milk supply and another 30 distributors handled 6 percent. This leaves only 4 percent to be accounted for by 575 other distributors in the Greater Boston market. A large proportion of this latter group are producer-distributors.

In 1935, two distributors accounted for approximately 63 percent of class I sales in the Greater Boston market.

[5] Milk income accounted for only 37 percent of farm income in 1933, but rose again to 45 percent in 1934. The relative decline in milk income in 1933 was due to a slight decrease in milk income and a considerable increase in farm income from the preceding year.

[6] For the entire United States, farm income increased 17.3 percent during 1933, whereas the composite price of 44 field crops and 13 livestock and livestock products increased 21.9 percent. The change between 1932 and 1934 was more pronounced, plus 29.7 percent for income and plus 46.7 percent for prices. Both milk and farm income increased about 19 percent during 1933. Farm prices increased about 20 percent during 1933. No index of farm prices by States is available. United States figures are calculated by the Division of Crops and Livestock Estimates of the United States Department of Agriculture.

[7] There was a 16-percent increase in the Boston shed in the number of cows and heifers 2 years old and over (both beef and dairy cows) although the estimated production per cow declined between 1929 and 1934, about 7 percent for each State except Vermont, which showed no change. Cow population increased 13.1 percent in Vermont, 13.7 percent in Massachusetts, 18.5 percent in Maine, and 24.3 percent in New Hampshire. It is significant to note that in 1930 the average production per cow in each State was larger than in 1929, indicating an attempt by producers to maintain their 1929 income despite lower milk prices. Herds average about 10 cows in Vermont, and between 4 and 5 in the other States.

[8] Estimated by Division of Crops and Livestock Estimates, Bureau of Agricultural Economics, U. S. Department of Agriculture.

[9] 1930 Census, Bureau of the Census, U. S. Department of Commerce.

[10] State Census of Manufactures.

[11] Editor and Publisher 1936 Yearbook, p. 99.

[12] New England Dairyman, February 1934, p. 6.

The following tabulation obtained from the Massachusetts Milk Control Board shows the number of each type of distributor handling more than 50 quarts daily and the estimated volume handled per month by each sold in the Greater Boston market: [13]

Volume handled—quarts per month

	1,500	1,501 to 3,000	3,001 to 10,000	10,001 to 15,000	15,001 to 30,000	30,001 to 150,000	More than 150,000	Total
Producer dealers	33	25	46	5	6	4	----	119
Dealers	----	2	20	19	19	37	11	108
Intermediate dealers [1]	4	7	36	3	5	1	----	56
Total	37	34	102	27	30	42	11	283

[1] Variously known as subdealers, distributing brokers, and bobtailers in different markets.

Two hundred and eighty-three licensed dealers distribute milk in the Greater Boston market. That competition should be keen among the various distributors is to be expected with a major portion of sales accounted for by only two distributors and the remaining portion divided among 281 licensed distributors of various types to say nothing of the unlicensed distributors. This further illustrates the difficulty of maintaining a stable price structure in the Boston market.

Milk consumption in Boston.—As is the case with practically all cities in the country, only meager information on milk consumption in Boston is available. Over 5,712,000 cans of 40-quart capacity of milk were received in Boston in 1935, and cream receipts were about 555,000 cans of 40-quart capacity. Both milk and cream receipts for that year were substantially lower than in 1930. According to one study of consumption of milk in Boston [14] the trend was as follows, the year 1930 being used as a base or 100:

Year	Milk	Cream	Milk equivalent
1930	100	100	100
1931	103	101	102
1932	102	94	96
1933	92	93	92
1934	93	101	97

Although these figures indicate that total consumption increased in 1934, the same study also indicates that per capita consumption was still decreasing in that year, as appears from the following tabulation [14]:

Year	Quarts consumed per capita per year	Percent of change
1930	126.3	----
1931	129.2	+2.9
1932	125.0	−4.2
1933	112.1	−12.9
1934	111.4	−.7

[13] Distributors handling less than 50 quarts daily are not licensed.

[14] Preliminary report of an analysis by the Milk Research Council, Inc., New York City.

Consumption studies conducted in other metropolitan areas lead to the conclusion that economic conditions are mainly responsible for increases or decreases in the consumption of fluid milk. Although there has been a decreasing number of births per 1,000 of population the decrease in consumption, it is claimed, would probably have been greater and more rapid if it had not been for the educational program, promoting increased consumption of milk, carried on by various agencies. The New England Dairy and Food Council is one such agency. It was organized in 1920, under the laws of Massachusetts and its objective is to increase the sales of fresh whole milk through educational work and advertising.

The use of the funds received by the council is supervised by a committee made up of dealers and producers who make suggestions and approve the various projects as well as the financial budget for putting them into effect.[15]

The council is financed by a check-off of 1 cent per hundredweight of milk for cooperating producers and one-half cent for each hundredweight of milk handled by contributing distributors. The following tabulation, showing the extent of contributions from producers and distributors from 1921 to 1934, inclusive, reveals the fact that the producers bore the greater share of the burden in all except the first 2 of the 15 periods covered by the tabulation.

Commitments received by New England Dairy and Food Council

Year	Dealer	Producer	Total	Year	Dealer	Producer	Total
1921	$17,195.12	$6,735.85	$23,930.97	1930	$25,261.76	$53,590.97	$78,852.73
1922	17,846.11	10,893.59	28,739.70	1931 (6			
1923	21,928.74	30,464.75	52,393.49	months)	10,996.54	22,816.87	33,813.41
1924	19,011.69	30,808.59	49,820.28	1931–32	19,308.76	40,848.60	60,157.36
1925	19,464.13	31,563.93	51,028.06	1932–33	4,842.26	21,074.27	25,916.53
1926	19,640.20	31,499.96	51,140.16	1933–34	227.88	6,007.46	6,235.34
1927	20,081.50	32,560.63	52,642.13	1934–35	300.00	675.00	975.00
1928	22,167.77	41,885.85	64,053.62				
1929	23,599.05	46,817.83	70,416.88	Total	241,871.51	408,244.15	650,115.66

Since 1933 contributions have gradually dwindled and, it is reported, the council now is on the verge of disbanding, although efforts are being made to revive it. The difficulty at present, it is said, is that some groups refuse to contribute and the council feels that any work on its part would benefit these noncooperating groups.

Market conditions, 1929–35.—The milk-price situation in the Boston market is reported to have been fairly stable up to 1929–30. Beginning about that time butter and cream prices began to drop and before many months had passed milk prices to the producer also declined considerably. This created a serious situation for

[15] The following quotation from a recent Dairy and Food Council report describes the connections of the council and its work: "This council is one of the regional groups of the National Dairy Council of which there are over 27 local, State, and regional councils in the country, and it receives the benefit of methods and materials developed by the National Dairy Council as well as other councils of this group. The New England Dairy and Food Council has issued milk health printed material cooperatively with the Boston Dispensary and the Forsyth Dental Infirmary, and has had the cooperation in developing further milk material with both these organizations as well as the Community Health Association, Beth Israel Hospital Food Clinic, the Supervisor of Health Education in the Boston schools, the Doctor of Public Health and Biology at the Massachusetts Institute of Technology, and others doing supervisory work of health education in the district. All this material giving information on milk and its uses educates the people as to the proper place in the diet of milk products."

producers as most of the items of their fixed costs continued at practically the same levels.

The entrance of the Agricultural Adjustment Administration into the Boston market in 1933, brought about substantial improvement in market conditions, including higher prices to producers. Under the Federal market administrator there was, moreover, a more stable distributor price structure within the city, although this situation had broken down more rapidly than had the producer price.

On May 17, 1935, the Brewster [16] decision was handed down adversely affecting the marketing agreement and license. Noncompliance with the terms of the license immediately increased and has continued to do so until at the time of this inquiry it may be said that on the whole a number of the Boston distributors carry out only those terms of the license which are not particularly burdensome to them.

The Agricultural Adjustment Administration in carrying out the provisions of its license attempted to work through the existing marketing agencies in Boston as much as possible, as it did in other cities where it had established licenses. The largest cooperative in the market, however, while controlling a large proportion of the milk going into Boston had never been able to control the minor proportion that tended to demoralize the base and surplus plan price structure prior to the coming of the license. Today the situation is much the same, except that the problem has become more complex and this in spite of the State milk control board which was established in 1934, and the Federal supervision of the Boston market.

New England Dairies, Inc.,[17] a federation of cooperatives, of which the New England Milk Producers' Association is the dominant member unit, controls approximately 70 percent of the milk coming into Boston. The remaining portion is controlled by various smaller groups made up largely of cooperative creameries, some of which are members of New England Dairies, Inc. Some of these nonfederated cooperatives ship milk to the city, and sell it to distributors for resale in bottles or at wholesale, and others own or control facilities in Boston where they process, bottle, and distribute both wholesale and retail. One large cooperative creamery sells its entire output, which is bottled in the country, to the First National Stores, a chain-store system operating hundreds of stores in Boston. Another group of companies, privately owned, which buy largely on a flat-price basis, sell milk in Boston and are, it is claimed, responsible for much of the price cutting. Many of the smaller creameries, both cooperative and privately owned, depend, it is claimed, almost entirely on a cut price in order to sell in the Boston market.

So far it has been almost impossible to reconcile the demands of the Massachusetts producers located relatively near to Boston with those of a much larger group of producers sending milk to Boston from outside the State. At least the present economic status of the Boston milk market and the various means of control now in effect do not indicate that the solution to the problem of maintaining stable

[16] District court of the United States, District of Massachusetts, equity no. 4068 and equity no. 4069.

[17] The present New England Dairies, Inc., came into existence in 1935. Formerly it was known as the Consolidated Dairies, which was organized on May 29, 1933. Prior to this date a similar federation of cooperatives, also known as New England Dairies, Inc., had functioned for a short time, from May 1 to Dec. 31, 1932.

conditions in both the Boston producing and sales area has been found. It is easy to understand the difficulties confronting control authorities faced with the demands of many Massachusetts producers that the Boston market be maintained for their benefit and that milk and cream from outside the State share in the Boston market only after the Massachusetts production had been absorbed.

Sanitary requirements.—The office of the Boston milk inspector was established over 75 years ago. This, it is claimed, was the first milk inspector's office to be established in this country. The law providing for the office was approved by the Governor on April 6, 1859.[18]

All milk sold in Boston is pasteurized, with the exception of milk certified by the Medical Commission of Boston, Inc. Effective January 1, 1935, all milk sold in Boston must be from tuberculin-tested cows.

City inspectors collect samples of milk from distributors' wagons and from stores. During the year 1935, approximately 30,000 samples were collected, and over 500 were collected from one distributor. Each month a printed report is issued by the bureau of milk inspection, Boston health department, listing the distributors supplying milk to Boston and showing the average solids, butterfat, and bacteria count of the milk supplied by each distributor as shown by tests of the samples taken by the inspectors.

All distributors in Boston selling more than 20 quarts of milk daily must have city licenses and on March 9, 1936, 69 licenses[19] were in effect. Twenty of the licensees had plants in Boston and the remainder had plants outside of Boston but delivered milk in Boston.

By an act of the Massachusetts State Legislature, approved March 19, 1935, producers and distributors are required to obtain permits from the board of health of the city or town where the milk is sold or delivered. The act further provides that no producer shall be entitled to a permit unless a certificate of registration has been issued by the director of the division of dairying and animal husbandry of the Massachusetts Department of Agriculture as to the dairy farm producing the milk. This provision does not apply to cream production.

Farm or producer inspection is under the jurisdiction of both the State and municipal authorities. In 1935, inspectors of the dairy division of the Boston health department made 7,675 farm inspections and made 6,738 sediment tests. The inspectors prepare a farm inspection score sheet on which the farm is rated and a report is made to the State authorities on which the certificate of registration may be issued.

Massachusetts State inspectors inspect in Massachusetts and other States in which milk is produced for distribution in Massachusetts. No charge is made for inspection either in or out of the State and it is not the purpose of the Massachusetts State inspection authorities to exclude out of State milk.

State inspectors visit farms and prepare reports on which certificates of registration may be issued. It is estimated that the State inspectors should inspect about 7,500 farms during the current year.

[18] City Docket No. 24, city of Boston, Twelfth Annual Report Inspection of Milk 1871, p. 6.

[19] These distributors operate within the city limits of Boston.

There is a dual control in dairy farm inspection, but the chief of the dairy division of the Boston Health Department represents that there is no duplication of inspection, due to the fact that the year's program is mapped out by the State and municipal authorities and certain inspection territories are allocated to each. Inspectors of other cities in Massachusetts also cooperate to the end that inspection may be conducted as efficiently as possible and without duplication.

The Boston Health Department accepts statements from the State officials of other States as to inspection of plants from which cream is shipped into Massachusetts. The commission believes that other States would do well to follow this practice,[20] with due consideration to the thoroughness of inspection given by any particular State.

SECTION 2. COOPERATIVES IN BOSTON MILKSHED

There are a substantial number of milk producer cooperative associations in the milkshed from which Boston obtains most of its supply of milk and cream. Some of these are creameries supplying cream while a few bottle milk and distribute it in Greater Boston. Most of the milk and cream consumed in Boston, however, is produced by the members of one cooperative, the New England Milk Producers' Association, which is of the bargaining type. About 12 of these cooperatives, including the last named, are now members of New England Dairies, Inc., which also acts as a sales agent for 5 noncooperative creameries.

The New England Milk Producers' Association.—The largest cooperative in the Boston milkshed, the New England Milk Producers' Association, was organized in 1913. Prior to that year the dominating cooperative in the area was the Milk Producers' Union, organized in 1886. This organization was a bargaining type of cooperative with the additional objectives of regulating supply, reducing the surplus milk evil, and securing more favorable freight rates. The membership of the union was composed of some of the producers supplying the Boston market. As a result of an indictment by the Government in 1911 based on the allegation that the agreements between the union and the distributors were in restraint of trade and a violation of the Sherman Antitrust Act, the association disbanded.[21]

The original New England Milk Producers' Association was organized by producers who had formerly held stock in the Boston Cooperative Milk Co.[22] The objectives of the new association were similar to those of the Milk Producers' Union. The membership was made up of milk producers shipping to Boston. In August of 1913 a full-time manager was appointed, and by 1916 the membership was slightly over 2,000.

[20] If authorities desire to keep out milk or cream from other States, refusal to inspect is an important bar to such milk and cream. Generally speaking, cream for manufacturing purposes is allowed fairly free movement between milk-sheds, but milk and cream for fluid consumption are in many cases closely restricted and inspection requirements are a commonly used means of stopping their movement.

[21] The indictment was never acted upon, according to History Series No. 8, of the National Cooperative Milk Producers' Federation, from which the information was obtained.

[22] This was a producers' cooperative venture that never materialized. The producers intended to build a plant in which to manufacture their surplus milk. However, the effort was abandoned after the Government had brought its suit against the Milk Producers' Union.

In 1916 the N. E. M. P. A.[23] demanded a higher price from Boston distributors on the grounds that commodity prices were advancing and milk prices were relatively low. The Boston distributors refused the association's demand and as a consequence milk was withheld from the market for 3 weeks beginning October 1, 1916. This action by the cooperative was successful in forcing the distributors to meet the association's terms. It is reported that the winning of this fight or strike resulted in a substantial increase in membership.

Following this strike the New England Milk Producers' Association was reorganized into its present form, and in June 1917, the association was incorporated under the Massachusetts General Statutes of 1917, chapter 224, which exempted it from the provisions of the State antitrust laws. A drive for members was also instituted in 1917 which brought the number up to 8,000. By 1920 the membership was approximately 20,000, at which level it has ever since been maintained. In addition to selling milk to dealers in Boston, the association also sold a considerable part of the milk distributed in the local markets of Springfield and Worcester, Mass., and Manchester, N. H.

In 1924 an attempt was made to bring the milk producer cooperative selling agencies of the area into one organization. It was the hope of the proponents of the plan to gain thereby a more complete control of the supply of milk in the New England producing area. The attempt failed because many of the organizations refused to agree to the plan.[24]

Another manifestation that the New England Milk Producers' Association was becoming more powerful in the market is its action in dealing with the New England Creamery Products Co., an organization of small distributors. The following statement is taken from a History of the New England Milk Producers' Association:[25]

> The New England Creamery Products Company, an organization of small-dealers, notified the Sales Committee of the association in December, 1927, that on and after January 1, 1928, they would neither continue to purchase milk under the N. E. M. P. A. plan nor report purchases and sales to the Milk Administrator. This, in effect, was declaring their intention to buy on an unknown price basis. Their decision was referred to the Board of Directors. The association has always stood on the principle that all dealers buying through the N. E. M. P. A. would use the same plan. The association, after all other efforts had failed, advised its members to withdraw their milk from the plants of this company. The producers showed a ready response with the result that the New England Products Company soon sold its plants to dealers who purchased under the N. E. M. P. A. plan.

As a result of this controversy, the association established a special fund to be known as the dairymen's benefit fund, so that when producers were affected by a price controversy they could be reimbursed for their losses. This protective device has been continued as a permanent policy of the association.

A general manager, selected by the board of directors of the New England Milk Producers' Association, is the active official of the association.

The association is financed through the medium of a 3-cent deduction per hundredweight on all milk handled by the association.

[23] This abbreviation of the New England Milk Producers' Association is used frequently in this discussion of the Boston market.

[24] Eventually the plan was revived and resulted in the organization of New England Dairies, Inc., of which New England Milk Producers' Association became a unit.

[25] The National Cooperative Milk Producers' Federation, History Series No. 8, pp. 10 and 11.

Two cents of this is to cover the cost of operating the association and 1 cent is to build up the emergency reserve fund.[26] According to the bylaws of 1936 the emergency reserve fund may also be used "to acquire by purchase or otherwise, such plant or plants as may be necessary to provide markets for the dairy products of members of the Association", and "to meet an extraordinary or unusual emergency when so declared by the Board of Directors." However, the New England Milk Producers' Association has never operated in any capacity except as a bargaining association.

United Farmers' Cooperative.—The United Farmers' Cooperative Creamery Association was organized in 1919 under the State laws of Vermont. Its bylaws provide that the association shall be a cooperative corporation formed under the Cooperative Marketing Act of the State of Vermont, chapter 241 of the public laws thereof, and that the purpose of the association shall be the handling, processing, manufacture, purchase, and sale on its own account and/or as agent for its members, of dairy and all agricultural products and the purchase and sale of general farm supplies.

The association membership has increased steadily since its inception. In February 1936 it had 1,575 members[27], all of whom are situated in the four northern counties of the State of Vermont. It has eight receiving stations and four processing plants all located in Vermont. Practically all its milk is marketed in Greater Boston.

In 1935 the association sold 103,124,373 pounds of milk which was a material increase over the 1934 sales of 83,481,470 pounds. Approximately two-thirds of the milk handled by the organization is separated at the country plants and the skimmed milk is processed into skim-milk powder, evaporated skim casein, etc. The remaining third is shipped to Boston as fluid milk as is also a large part of the cream produced. The byproducts from the skimmed milk are sold to the best advantage to purchasers throughout the country and shipped directly from the Vermont processing plants.

[26] The emergency reserve fund is the same as the dairymen's benefit fund, previously mentioned.

[27] The association has no contract with its producers. However, the bylaws provide in part as follows: "SEC. 3. Unless and until the association shall make a specific contract in writing with any member to the contrary, and unless and until the directors shall make any rule or regulation, as hereinabove provided in section 2, which provides otherwise, it is understood and agreed:

"1. That each member who delivers his products to the association covenants and agrees with the association that all his products at the time so delivered to the association will be delivered and sold by him exclusively to the association or its duly recognized and established facilities or its other agencies.

"2. By such delivery, the title to the member's products shall pass to the association. The association shall resell and/or process and resell, and/or otherwise dispose of, all the products bought or received by it to the best advantage of all the members of the association taken collectively, all in its sole discretion, and the association shall pay the individual members for their products as hereinafter provided in sec. 4.

"SEC. 4. The association shall deduct from the prices so received from the sale or disposition of its products all its operating expenses, including selling, overhead, and all other costs and expenses, charges, and losses, if any, including interest or dividends on stock not exceeding 6 percent per annum, reserves for making capital and permanent and beneficial improvements, and any and all other proper reserves, or deductions, as determined by the directors or their executive committee and shall pay each member at reasonable and convenient times his substantially proper and proportionate share of the net receipts of the association determined as aforesaid.

"SEC. 10, ART. 5. Any member may withdraw from the association between February 16 and August 15 of any year upon giving 60 days' written notice of his intention thereof, and such member may withdraw at any time between August 16 and February 15 of any year upon giving 30 days written notice of his intention thereof, and at the time when his withdrawal becomes effective his stock shall be redeemed as hereinafter provided in sec. 11."

The manager of the association states that members may terminate their membership at their own option as the association does not wish to retain members who are desirous of severing their connections with the association.

Most of the raw milk shipped to Boston is pasteurized there in the association's plant and is distributed to the wholesale market, consisting of hotels, restaurants, and stores. A subsidiary of the cooperative, the Andrews Milk Co., which obtains its supply from the United Farmers, has about 13 delivery routes and sells to retail customers. Two comparatively small intermediate distributors sell milk under the association's dealer license, but they handle less than one-fourth of 1 percent of the association's milk. There are also about eight licensed distributors operating in greater Boston who purchase a small part of the supply of milk which the association ships to Boston. The association manufactures ice cream and has been in this business for about 5 years.

Each member of the United Farmers must be a stockholder to the extent of one or more shares of stock. The stock is valued at $10 per share and pays dividends of 50 cents per share each year.[28] Each member or stockholder is entitled to but one vote regardless of the number of shares he may hold.

The association charges each member 10 cents per hundred pounds of milk. This payment, or check-off, is the only deduction made by the association from the members' milk checks for its own account except a charge for hauling to the country station.

The association has laboratories in its Boston plant and in its Morrisville (Vt.) plant, and has inspectors who make butterfat tests to check the tests of the distributors. Its field men inspect farms, and in case laboratory reports indicate that milk is below a certain standard, the field inspectors trace the inferior milk to its source and assist in remedying the situation.

The United Farmers is not connected with the New England Dairies group of cooperatives in any way. Apparently it has preferred to operate independently. Its activities in the Boston market have been criticized frequently by other cooperatives and by distributors. According to report the United Farmers has been a disturbing factor, especially in the way of price cutting. It is possible that much of the independent attitude of the organization is due to the fact that its members are located in Vermont, where, it is reported, production costs are lower than in other parts of the milk shed and that these members believe the present arrangement permits them to participate in the Boston market on a more profitable basis than if they became a part of one large cooperative or other organization, such as New England Dairies, Inc., covering the entire area.

New England Dairies, Inc.—As the Boston producing area increased in size, small cooperatives in Vermont and other New England States began sending fluid milk into the Boston market. In order to break into this market, it is reported, price concessions were willingly made. The officers and directors of the New England Milk Producers' Association realized that unless the milk coming into Boston was under some sort of unified control there would be constant market disorder and probably low returns to the producer. The New England Milk Producers' Association was in hearty accord, therefore, with the suggestions of a fact-finding committee appointed by the commissioners of agriculture of Massachusetts, Vermont, and Maine, to study the milk-marketing situation. This committee, after holding meetings in June 1930 reported in part as follows:

> The Committee found that fundamentally the causes of the unstable conditions in the Greater Boston market were largely lack of uniformity in the sales practices, both with respect to the producing agencies supplying the distributors with milk, and the resale of that milk to the wholesale and retail trade by the various dealers of Boston, also a lack of cooperation between the various producing agencies, as well as a lack of cooperation between the dealers and distributors in Boston, and a resultant lack of cooperation between the dealers and the producers. This would appear to have been occasioned from the fact that there was no unified cooperative organization embracing both the members of the New England Milk Producers' Association, as well as cooperatives or independents, resulting in a lack of uniformity in the methods of selling their products and the prices obtained for the same; also from the fact that there was no strong organization of dealers in the City of Boston with whom the producers could cooperate as a body. This has led to a form of individuality on the part of both producer and dealer and a lack of appreciation of the problems and difficulties under which each branch of this business was laboring. This more or less chaotic situation does not redound to the benefit of the consumers, the dealer, or the producer, as it leads to fluctuations in price unwarranted by the actual facts.
>
> After hearing the evidence brought out on the various facts presented, the Committee suggests the following remedies:
>
> 1. That an overhead organization be formed, embracing the New England Milk Producers' Association, the cooperative creameries, the independent creameries, and all others engaged in producing milk and cream for sale in the Greater Boston market. This organization should have on its executive board representation by each group of producers, so that each of these groups may be fairly represented in the whole. It should have a carefully drawn set of bylaws by which it shall be governed.
>
> 2. It should establish a Sales Plan and Contract that is reasonably uniform for all groups, which would tend to distribute the milk and cream from these various groups to the ultimate buyer at a price practically uniform to each buyer, so that all dealers would practically own their milk and cream on an equivalent basis.

The fact that it was April 30, 1932, before an organization was effected is indicative of the many obstacles that had to be overcome. On that date, New England Dairies, Inc., began functioning as a sales agency for a large part of the supply going into the Boston market. The organization, however, was only of a temporary nature, as a more permanent set-up was being planned to take its place. As the contracts expired December 31, 1932, however, and no extension of time was obtained, New England Dairies, Inc., temporarily went out of existence at this time. As a result price negotiations again fell into the hands of the New England Milk Producers' Association and the other agencies selling milk in Boston, and the market quickly returned to its former state of disorder. Up to this time New England Dairies, Inc., according to report, served to stabilize producer prices on about 90 percent of Boston's milk supply, but it failed to stabilize resale prices because of a comparatively small quantity of uncontrolled milk.

Those cooperatives which were not willing to join a permanent form of organization for all New England dairies brought negotiations temporarily to a standstill. An alternative proposal was then presented to form a federation of federations, the former New England Dairies group to constitute one federation and the remaining

[28] Sec. 2, art. 5, of the bylaws provides: "Upon the member's joining the association, the association shall thereupon issue in the name of the member at least 1 share of stock and the association may issue such number of shares of its stock, not exceeding 10 percent of the total outstanding stock of the association as the member shall elect."

cooperatives to make up the other. The two groups would then sell their milk through a central sales agency.

Although this plan never materialized, the participants from the old New England Dairies group organized a cooperative federation under the name, Consolidated Dairies, which began to function May 29, 1933. A report in the November 1933 issue of the New England Dairyman, on Consolidated Dairies, states that they controlled approximately 80 percent of the milk going into Boston and that they were handling between 45,000,000 and 50,000,000 pounds of milk and cream per month. The fact that the Agricultural Adjustment Act went into effect May 12, 1933, encouraged Consolidated Dairies to begin operations in spite of the competition offered by the agencies bringing the remaining 20 percent of the milk into Boston. On June 1, 1933, Consolidated Dairies sent a petition to Washington requesting Federal control. As was said by the general manager in his annual report for 1933:

> Our aim from the start was to invoke the strength of the administration at Washington to stabilize the market while Consolidated Dairies was developing a more complete marketing program.

In 1935 Consolidated Dairies changed its name to New England Dairies, Inc., the same as that of the earlier organization which preceded it. Early in 1936 New England Dairies, Inc., was acting as the sales agency for 12 cooperative organizations, one of which, the New England Milk Producers' Association, was the largest cooperative in the milkshed. Fifteen country stations are owned and operated by New England Dairies and two additional ones are leased. New England Dairies is also selling agent for five proprietary creamery organizations.

New England Dairies, Inc., is the dominant organization in New England representing the producers, and the New England Milk Producers' Association is the dominant unit of the federation. Although no membership figures are available for New England Dairies, the New England Milk Producers' Association had over 20,000 producer members in 1935, of which approximately 4,000 are located in Massachusetts. The organization set-up for New England Dairies, Inc., is the same as for the New England Milk Producers' Association, and the activities for the two associations are carried on by the same staff.[29]

The aim of New England Dairies, it appears, is to attain complete control of the Boston milk supply, either directly or indirectly. As its sphere of influence has spread over all New England, producers located in Massachusetts and selling milk in Boston believe that their interests are being neglected to the benefit of a larger number of producers located outside of Massachusetts. The organization of the Massachusetts Dairymen's Cooperative Association in 1935, which intends to operate only in Massachusetts for the benefit of Massachusetts producers, is indicative of the trend of such sentiment. Furthermore, several important cooperatives in the area have steadily refused to join the New England Dairies set-up.

Massachusetts Dairymen's Cooperative Association.—The Massachusetts Dairymen's Cooperative Association was incorporated early

[29] New England Dairies, Inc., deducts 7 cents per hundredweight on all milk it handles, thus providing funds for operating expenses and for working capital.

in 1935 and commenced active operations about April 1, 1935. It is reported to have a membership of approximately 1,800 milk producers, all within the State of Massachusetts.

The association has three receiving stations where the milk is cooled and standardized. The standardization is to the requirements of the distributors buying from the association and is varied to suit the different butterfat requirements of the several distributors.[30] These receiving stations are located at Worcester, Andover, and Franklin, all in Massachusetts.

Very little stock of the cooperative is outstanding and the directors own the stock that has been issued. The par value of the stock is $25 per share. While the members of the association have the privilege of purchasing stock they are not urged to do so and very few hold any.

The association agrees with its members that the dairy products of all its members shall be sold to the best advantage and the net proceeds therefor, after expenses and dues are deducted, shall be paid to them.[31] All the milk is sold through a subsidiary known as Massachusetts Dairies, Inc. The milk is all used as class 1 or fluid milk and there is no surplus. The association's auditor prepares statements showing the total amount received for the milk and the amount of deductions for the cost of cooling, standardizing, etc., in the country receiving stations, other expenses, and association dues or check-off. The net amount due the producers is the balance after all these deductions have been taken from the receipts.

The association dues or check-offs are 4 cents per hundredweight, which are divided as follows: 2 cents per hundredweight for office expenses and 2 cents per hundredweight with which to set up a reserve fund to guarantee the producers against losses through nonpayment by distributors and to assure producers a market for their milk.

The net amount due association members for milk delivered is not known, of course, until after the audit of the sales and expenditures has been completed. The records of the association show that the

[30] Much of the milk received from the producers contains less butterfat than is required by distributors and ordinarily the association members do not produce sufficient milk from which cream may be obtained to raise the butterfat content to the desired standards.

[31] The association's contract with its members in part is as follows:

"2. The producer hereby appoints this Association his exclusive sales agent to sell all milk and other dairy products controlled by him except such milk as he may require for home or farm consumption and he hereby agrees to deliver his milk and dairy products to such distributors, milk plants, or creameries as may be designated by the Association.

"3. The producer agrees that the Association shall have a lien upon the milk and dairy products hereby contracted by the producer to be sold by the Association for any indebtedness of any kind owing by him to the Association, and any such indebtedness shall be deducted out of the net proceeds of the sale of such milk and dairy products.

"9. All milk, cream, and other dairy products of the producer, as soon as said producer has been notified of the acceptance of his membership by the Association shall be delivered by the producer in accordance with the terms of this agreement and this agreement shall remain continuously in force unless canceled by written notice by either of the parties hereto to the other between the 15th and 31st days of December, inclusive, of any year, which notice shall become effective on the 1st day of June following such notice. * * * No cancelation of this contract may be made by the producer within three years of the date of this agreement.

"10. The Association agrees to act as the sales agent of the producer and, as such, to sell and dispose of all milk, cream, and other dairy products of the producer, and of other producers who have signed contracts similar hereto, by such methods and means as it deems to be to their advantage.

"11. The Association agrees to guarantee the accounts of its producer members subject to the terms and conditions set forth in the regulations.

"14. The producer agrees to pay as dues to the Association the sum of four cents (4¢) per hundredweight of all milk produced or controlled by him. It is further agreed that the Directors shall have the right to change the amount of assessment from time to time as may be necessary within their discretion."

net returns of its producers, per hundredweight, from June 1, 1935, to March 1, 1936, were as follows:

June 1–15, 1935	$3.0225
June 16–July 15, 1935	2.70
July 15–31, 1935	2.40
Aug. 1–15, 1935	2.30
Aug. 15–Sept. 15, 1935	2.40
Sept. 15–Oct. 31, 1935	2.35
Nov. 1–15, 1935	2.40
Nov. 15–Dec. 31, 1935	2.50
Jan. 1–Feb. 15, 1936	2.50
Feb. 16–29, 1936	2.60

The association has no contracts with distributors, except those known as producer-distributors. The records show that during the period February 1 to 15, 1936, milk was sold to 36 distributors and the prices paid by these distributors ranged from $2.70 to $3.27 per hundredweight.

The volume of business of the association has increased steadily and during the 15-day period, February 1 to February 15, 1936, inclusive, it handled 6,472 40-quart cans of milk, or an average of 37,106 pounds of milk per day.

The association has contracts with haulers to truck the milk from its country stations to the distributors' plants. The contract charge for hauling is on a basis of a stated price per 40-quart can, regardless of the number of cans delivered to each distributor.[32]

The haulers start their trips as early as 2 a. m. and deliver their milk to the distributor's plant early in the morning where it is pasteurized, bottled, and delivered.

About 300 of the producer-distributors operating in greater Boston have contracts with the association which in part provide as follows:

1. That the producer shall become a member of this Association in good standing and entitled to all privileges and services of the Association except the rights to have his milk marketed or any rights of the guarantee fund of the Association and agrees in return to pay the Association as an annual dues the sum of fifty cents (50¢) per cow based on the average number of cows of milking age owned or controlled by him during the year and to pay such dues annually on February 1 of each year, or semiannually one-half on February 1 and one-half on August 1, of each year.
2. The member agrees to furnish the Association on or before January 10, of each year with a statement of the number of cattle owned or controlled by him.
3. If the member discontinues the marketing or distributing of his milk at retail, he agrees to immediately notify the Association upon which event this contract shall terminate and he agrees to enter upon a regular producer's agreement with the Association as it may then be in force.

These producer-distributors produce, process, pasteurize, bottle, and sell milk. Their herds consist of from 50 to 100 cows although there are a few herds of over 100 cows and there is one herd of 700 cows. It is the general practice of these producer-distributors to purchase fresh cows annually.

It is alleged that the producer-distributor members are opposed to regulation or control by the Federal Market Administrator as they believe that under such control they would be regulated both as producers and as distributors and that their object in affiliating with the association was to have its assistance in fighting their battles.

[32] The hauling charges from each of the 3 country stations to the Boston market are as follows: From the Andover plant, 17½ cents per 40-quart can; from the Worcester plant, 17½ cents per 40-quart can; from the Franklin plant, 20 cents per 40-quart can.

It is claimed that the association was organized in the interests of the cooperating distributors and producer-distributors as well as in the interests of the producers. The association was opposed to the Federal Marketing Agreement and contends that because of higher production costs of Massachusetts producers, the base rating plan for the entire milkshed was unfair when applied to Massachusetts producers for in other words, it is contended that the Boston market should benefit Massachusetts producers and therefore, that Massachusetts produced milk should not be pooled with milk from the rest of New England.

From the standpoint of the members of the association and of cooperating distributors the association is reported to have proven of material benefit. The producers apparently have received prices greater than the average blended prices received by other producers, in New England, because the distributors cooperating with the association sell milk in a higher class of utilization than do the average distributors. This permits the payment to members of the Massachusetts Dairymen's Cooperative Association of the higher prices for the higher grades of utilization. This advantageous position, however, is dependent upon general market conditions as maintained by other distributors who handle a high percentage of the milk distributed in Boston and carry the burden of disposing of milk in excess of class I utilization.

The Massachusetts Dairymen's Cooperative can continue to obtain more money per hundredweight for milk produced by its members, and its operating distributors can continue to maintain their present arrangement only so long as the milk produced by its membership is kept within the class I requirements of its cooperating distributors, and also only as long as other distributors handling the greater part of milk sold in Boston continue to handle the milk in excess of the class I or fluid-milk requirements.

Bellows Falls Cooperative Creamery, Inc.—The importance of the Bellows Falls Cooperative Creamery, Inc., of Vermont as a factor in the Boston market or sales area is due in considerable measure to its connection with the First National Stores.

In 1921, the predecessor of the First National Stores arranged to obtain milk from a group of farmers near Bellows Falls, Vt., who had formed a cooperative, and the first shipment was received in Boston in December 1921.

With a start of about 350 producers, the Bellows Falls Cooperative increased in membership and by 1934 had over 1,400 members with a production of over 335,000 quarts of fluid milk per week as well as about half that much cream.

Milk produced by the Bellows Falls Cooperative for the Boston market, which is distributed through First National Stores, is processed, pasteurized, and bottled at Bellows Falls. This is the only milk consumed in Boston that is not pasteurized and prepared for delivery at plants in or near Boston, according to the Chief of the Dairy Division of the Boston Health Department who stated that "with the exception of milk from Bellows Falls all milk shipped to Boston is raw and must be processed at the plant where it is bottled."

From the New England Dairyman of June 1933 (p. 1) it appears that the Bellows Falls Cooperative was supplying approximately 10 percent of the milk consumed in Boston. This small proportion of the total milk supply, however, by no means indicates its importance. The question of store differentials has been much discussed throughout the dairy industry but nowhere more thoroughly, perhaps, than in the Boston market. Since 1921 the stores of First National have sold milk at prices ranging from 1 cent to 4½ cents per quart under the retail-wagon price [33] despite the protests which were constantly being made. Hearings have been held devoting much time to the store differential question and briefs pro and con have been submitted. The company has maintained steadfastly that store distribution was so much more economical than the route system as to justify the differential. To date no exhaustive analysis of the comparative costs of distributing milk by routes and through stores has been published. It is doubtful if a sufficiently comprehensive survey to decide this important point can be made without the expenditure of far more money than any public body has so far been willing to appropriate, despite the very fundamental importance of the question. In the meantime the controversy rages.[34]

Apparently the producer members of the Bellows Falls groups have been satisfied that their arrangement with First National Stores is the best they can make for they have defeated many attempts to absorb their organization. Claims are made that the cooperative has developed an efficient system of distributing the milk produced by its members and that many economies have been effected. It is interesting to note that only two sizes of containers are used for distributing through the stores, quarts for milk and half pints for cream.

SECTION 3. FEDERAL CONTROL OF THE BOSTON MARKET

A Federal milk license and marketing agreement became effective in the Boston producing and sales area November 3, 1933. An excerpt from a handbook issued by the Boston Market Administrator states some of the reasons for Federal control and the objectives to be obtained in that market:

> The purpose of the license is to stabilize producer milk prices and the purchasing power of dairymen in the Boston milkshed at a fair and reasonable level. All distributors handling fluid milk for consumption in the Greater Boston market are automatically licensed by the Secretary and are permitted to continue in business only subject to the terms and conditions of this license.
>
> Enforcement of the license lies with the Secretary of Agriculture, by virtue of his power to revoke dealers' licenses in case of violation. Administration of the license is entrusted to a Market Administrator, who is designated by the Secretary of Agriculture. The expense of administering the license is paid from an assessment upon all producers of two cents per hundredweight on all milk marketed.
>
> The Boston milk license came as a result of the producers' cooperative marketing associations of the Boston milkshed applying to the United States Government for assistance in a satisfactory solution of the marketing problems in this area. The application to Washington came at the end of nearly three years of efforts to stabilize the Boston Milk Market through the voluntary cooperation of the various groups of producers. The license is the means by which the Agricultural Adjustment Administration is assisting the producers in the Boston milkshed to solve their marketing problems. It is not an attempt to displace cooperative effort with governmental regulation.
>
> While the aim of the license is to stabilize marketing conditions for the entire industry, including producers, distributors, and consumers, it was put into operation primarily from the standpoint of assisting producers. However, the license also insures a reasonable price to consumers and an equitable, uniform cost of milk to all distributors.

Boston has been under Federal control for over 2¼ years. During this period changes and amendments in the licenses have been made from time to time to more adequately meet the problems of the market. The latest provision for Federal control of the Boston market is embodied in an "Order Regulating the Handling of Milk in the Greater Boston, Massachusetts, Marketing Area", effective February 9, 1936.

Recently an agreement has been reached between the Massachusetts Milk Control Board and the Federal Milk Administrator for joint administration in the Boston market. A concurrent order which will apply to the Boston milk distributors handling only Massachusetts milk will be issued by the State board to provide for the same prices, terms, and conditions of purchase from producers by distributors as in the Federal order. The one exception is that the Massachusetts board believes it does not have authority under the law to provide for equalization of milk returns to producers in its order.

Two considerations are basic in all of the various agreements and licenses, and in the most recent order affecting Federal control of the Boston market. Their purpose is to maintain stable market conditions and they are: (1) that all distributors in a market pay the same price for the milk they use and (2) that producers receive a uniform price for milk taking into consideration proper differentials for quality, location, evenness of production, etc. The effectiveness of market control depends largely on the extent of compliance the milk market administrator is able to bring about. In the Boston market, it is reported, a small group of producers and distributors have been able by persistent noncompliance with the Federal regulations to seriously threaten market stability. The following excerpt, bearing on this point, is taken from the Boston Milk Administrator's Review, August 1935, under the heading "Uncontrolled Milk Forces Reduction in Class I Price."

> The substantial volume of whole milk being shipped into the Boston market daily in recent months by distributors who are not complying with the terms of the Federal License finally forced a reduction in the Class I price effective July 16. The decrease in the Class I price was 47¢ per hundredweight or 1¢ per quart. In addition, higher adjustments were allowed to distributors for handling and shipping milk from country stations.
>
> Heavy production on account of favorable weather conditions and an unusually large spread between the Class I and Class II prices have made it more profitable than usual for distributors to buy milk from producers at the prevailing composite price without accounting for their use of the milk. Available information indicated that in recent months the average cost at the market of the whole milk sold by such distributors has been *approximately 1½¢ per quart less than the Class I price contained in the license.*

A serious blow to the Federal license was the decision in the district court of the United States, district of Massachusetts, in the case of the *United States of America and Henry A. Wallace, Secretary of*

[33] According to data from New England Milk Producers' Association.
[34] This question as it affects Boston is being investigated now as a part of a milk distribution study being made by the Massachusetts Milk Control Board.

Agriculture, v. *The Seven Oaks Dairy Co. and the Westwood Farm Milk Co., Inc.*, on May 17, 1935. This decision was summarized as follows:

The license must be held to be void and unenforceable for the reasons (*a*) that it purports to operate upon persons not within the reach of the authority conferred upon the Secretary of Agriculture by the statute; (*b*) that its scope has been carried beyond the limits of the law by regimenting production and fixing prices with respect to transactions that have no substantial or direct relation to interstate commerce; and (*c*) that these excesses, found in inseparable provisions of the license, vitiate the whole license.

In contrast to this is an excerpt from an opinion of the Solicitor of the Department of Agriculture for the use of the Committee on Agriculture and Forestry of the United States Senate in 1935, relating to the question of the constitutionality of the Agricultural Adjustment Act, as amended by the bill (H. R. 8492) an act to amend the Agricultural Adjustment Act, and for other purposes. The excerpt follows:

In metropolitan milk markets such as Boston, there is, of course, a relatively small volume of milk which is produced in the same State in which it is distributed, and hence does not move in interstate commerce. The application of milk orders to this relatively small amount of milk is amply justified under the doctrine that Congress has the power to regulate intrastate commerce in connection with its regulation of interstate commerce when intrastate commerce is so intermingled with the interstate commerce regulated that effective regulation of the latter requires regulation of the former, or when the regulation of interstate commerce alone would give an unfair competitive advantage to intrastate commerce of the same character, or when intrastate commerce directly affects or burdens interstate commerce. Thus the Interstate Commerce Commission may regulate intrastate railroad rates when such intrastate rates, if unregulated, would hinder effective regulation of interstate railroad rates, or would discriminate against those who ship goods in interstate commerce. (*The Shreveport case*, 234 U. S. 342; *United States* v. *Louisiana*, 290 U. S. 70; *New York* v. *United States*, 257 U. S. 591). It seems obvious that in these interstate milk markets the fixing of minimum producer prices for interstate milk could not be effective without fixing equivalent prices for intrastate milk which is in direct competition with interstate milk, and the fixing of minimum producer prices for interstate milk alone would clearly discriminate against such milk.

Following the United States district court decision, enforcement of the license became more difficult, especially, of course, in respect to the provisions relating to minimum prices to producers, reports by distributors on milk purchases and utilization, payments into the equalization fund, and the collection of the check-off for the support of the Federal Milk Market Administration.

SECTION 4. MASSACHUSETTS MILK-CONTROL BOARD

The Massachusetts milk-control law became effective July 3, 1934. It created a milk-control board which was given the following specific power and duties:

(1) To designate and, in cooperation with local boards of health, to establish and maintain market production zones and enforce all orders, rules and regulations relating thereto, and to supervise and regulate the milk industry of the commonwealth, including market production zones within and, insofar as such zones supply milk for consumption within the commonwealth, without the commonwealth, and the production, delivery and sale of milk and milk products within the commonwealth, and/or to the control of unreasonable and burdensome surplus of milk in any market coming from either within or without the commonwealth; *provided*, that any such order, rule or regulation pertaining to the sale of milk shall be subject to section fifteen; and, *provided further*, that nothing in this act shall be construed to repeal or affect any law or local ordinance, bylaw, rule, or regulation affecting the public health. (2) To investigate and regulate, as the emergency permits or requires, all matters pertaining to market production zones, and to the production, manufacture, processing, storage, transportation, disposal, distribution and sale of milk and milk products within the commonwealth, and to the establishment of reasonable trade practice; *provided*, that such matters pertaining to the sale of milk shall be limited to those within the purview of the provisions of section fifteen. (3) If the producers within a market production zone delivering milk for sale in a particular market within such zone fail, for any cause, to furnish a sufficient supply of milk to meet the consumer demand of such market, the board, while such failure continues or during any emergency, may permit milk dealers in such market to purchase milk from such sources outside such zone in such amounts and for such period of time as the board may approve. (4) The board, or any member or authorized agent thereof, may hold hearings at such places and at such times as it deems necessary to administer this act. No provisions of this act conferring a general power upon the board shall be deemed to be impaired or qualified by the granting to the board of this act of any specific power or powers.

In view of the fact that the Boston area is under Federal jurisdiction the objective of the control board in this area is to protect Massachusetts producers shipping to Boston and to approve resale price schedules in the Boston sales area.

Due to the vociferous claims of the producers and to some doubt on the part of the board as to the legality of equalization in paying producers, the principle has not been adopted in the computation of payments for milk of the Massachusetts producers. The equalization plan provides that all milk sold in the Boston market is to be pooled and paid for on the basis of use. The protests of the Massachusetts producers are based on the claim that the resulting price would be far lower than they could afford to accept. Although the quantity of milk shipped to Boston by Massachusetts producers in 1935 was less than 14 percent of the total receipts of that market, if equalization were applied to this group, they claim they would be ruined financially.

The problem involves the relative cost of producing milk in Massachusetts as compared with outlying sections. Until quite recently, many Massachusetts producers adjacent to the Boston market have been protected by relatively high freight rates from more distant points. Better roads and lower freight rates have tended to nullify this location advantage. Even now Massachusetts producers, it is claimed, are struggling for existence. The control board contends that dairying is an important asset to Massachusetts agriculture and should be encouraged in every possible way. At the present time, it is argued, the Massachusetts producer is not able to accept the equalization scheme as his labor costs are high and he must spend more for feed and fertilizer than producers located in Vermont, for example.

The control board method of setting resale prices in Boston is to get a majority of the distributors to agree to abide by a certain schedule of retail and wholesale prices. The only recourse the control board has against a dealer who will not comply with the price schedule is to revoke his license under a provision of the control board law which states:

* * * the board, after a hearing or an opportunity to be heard, may decline to grant a license or may grant a conditional or limited license to an applicant for a license as a milk dealer, or may suspend or revoke a license

already granted to a milk dealer, when satisfied of the existence of any of the following: * * *

(3) That he has committed any act which may demoralize the price structure of milk or interfere with an ample supply of milk for the inhabitants of the commonwealth.

In 1935 it was estimated that about 15 percent of the milk shipped to Boston was sold below the prices agreed upon by distributors in conference with the control board. One bid for the milk business of a Boston public institution was $17,000 below that warranted by the schedule of wholesale prices agreed on in conference with the milk-control board. Retail prices have been fairly well maintained, but compliance is weakening. This has been brought about by the wholesale price situation which has never been good because there are so many ways of giving discounts that cannot be checked by the control board auditors. Although the control board has threatened to revoke the licenses of price cutters it has never done so for this offense, as it is difficult to prove that price cutting by any one dealer demoralized the market structure.

The problems facing the Massachusetts Control Board are not easy to solve, for they have no control over the milk coming into the State, and yet they are directed by law to protect the interests of Massachusetts producers. It has been said that the control board has done its most effective work in the secondary markets.

In another section of this report the relationship between class and blended prices is discussed and attention is directed thereto in any consideration of attempts at price control. These price relationships are of primary importance in considerations of matters of controlling market conditions. Attempts at price control which do not take into account the proper balance between the values of milk used for different purposes are likely to prove of little consequence in achieving the desired end.

SECTION 5. MILK SETTLEMENT PLANS IN THE BOSTON MARKET

Introduction.—Because of the importance of the New England Milk Producers' Association in the Boston milkshed the discussion of milk-payment plans in that area is largely based upon the plans used by that group. The payment plans followed by other cooperatives in the Boston shed do not differ greatly in basic principles from the plan of the larger association, except, of course, the flat price plan used by some of the smaller organizations already referred to.

The flat-price plan is the simplest in its application, although the price may have been arrived at by devious calculations involving the actual utilization of the milk purchased. Generally speaking, however, the flat-price buyers are the smaller distributing organizations which handle little milk other than that required to fill their requirements for fluid milk sales. These dealers offer producers a flat price for milk. The producer knows with considerable exactness the per unit price he is to receive under these circumstances.

The base and surplus plan of milk payments is a development based on distributing the burden of surplus milk among all the participating producers in the hope that by doing so production will be kept as closely as possible to the demands of the market. The theory of the plan has been published many times. The criticisms of it have also been made known. In the following discussion therefor, only a brief outline of the plan, and some of its important variations, are presented. Elsewhere in the report some of the weaknesses of the application of the plan are pointed out.

The Boston base surplus plan.—In 1917 the New England Milk Producers' Association entered into an arrangement under which the Boston distributors were to buy milk at a definite fluid-milk price from those producers shipping to them at that time. Wartime conditions, it is claimed, had increased the cost of production and agitation had begun for an increased price. By this time milk was shipped to Boston from outside the State of Massachusetts so that the whole matter of price was referred to the Federal Food Commission for a decision on prices, terms, and the conditions under which milk should be sold. A plan was worked out by the Commission whereby distributors were required to pay for all milk sold as fluid milk a designated price per quart delivered at the market. That portion of milk in excess of fluid requirements was supposed to be handled without loss or profit to the dealer.

The plan did not provide for bases or quotas for individual producers and the price each producer received for his milk depended entirely on the market outlet of his distributor for fluid milk. Thus some producers received a fluid price for a large percentage of their production and others did not fare so well. The Commission required sworn statements as to utilization of the milk received by distributors, and the statements were subject to verification.

After the Federal Food Commission was disbanded in April 1919 producers and distributors continued to operate under the same surplus plan.

An important change in the surplus plan, however, was made January 1, 1922. Under the previously existing plan producers were receiving a price for surplus milk that was less than the value of the milk for butter-making purposes. The amended plan provided that the surplus milk should be paid for on the basis of its value as butterfat at country stations, and any transportation or other charges on such milk should be paid by the distributor. In conjunction with this plan a so-called cream plan was developed which permitted milk shippers to keep skim milk on the farm and ship only the cream during the flush milk-producing season of the year. This plan, although it tended to reduce the surplus which a distributor actually had to handle, was taken advantage of by the distributors who began to purchase cream from producers not regularly shipping milk to Boston, and thus increased the surplus percentage of their regular shippers. The fundamental principles established in January 1922 were continued until 1930 except for changes in the price to be paid for surplus milk to cover its increased value in the Boston market.

The details of a modified surplus plan of milk settlement which went into effect in January 1930, are contained in the following explanation as presented to the producer members of the New England Milk Producers' Association:[55]

Consumption of milk in Boston has increased from three to four percent annually, due to increase in population and a larger per-capita consumption.

[55] New England Dairyman, November 1929, p. 9.

This increase has been met by the addition of new territory. These new areas have a much wider seasonal variation in milk production than those which have been shipping milk for a longer period. The result is a high seasonal surplus which falls as a burden on both the even producer and the uneven producer. This works an injustice to the even producer.

To remedy this situation the N. E. M. A. has modified its sales plan so as to encourage more even production by rewarding the even producer. Beginning January 1, 1930, the composite price will be paid each producer for all milk up to double the average amount he produced in October, November, and December 1929. Any milk in excess of this double base will be paid for at the Class 2 price.

Under the working of this modified plan the percentage of Class 2 milk, figured under the present surplus plan, will be reduced and the composite price (restricted to the double base amount) will be correspondingly increased to all producers. Milk produced in excess of the double base will not appear in the "market surplus" but will be paid for as an "individual surplus" at Class 2 prices.

With this plan in operation the even producer will get the advantage of increased composite price on all his milk and will not continue to carry the "individual surplus" of the uneven producer. The uneven producer will also get the increased composite price, up to the double base, but will receive a lower price for the individual surplus which he produces above that amount.

The plan does not restrict the amount of milk a producer may ship. It simply places his individual surplus in a class by itself where it will receive a price based on its value as a manufactured product.

The Present Surplus Plan.—The basis for payment for milk in 1930 will be a modification of the existing plan, not a new plan. The existing surplus plan is, therefore, still the basis on which the modified plan prices will be figured. In order to understand the working of the modified plan it is necessary to understand fully the method of price computation under the present plan. It is as follows:

	Per cwt.
Class I or fluid price:	
F. o. b. Boston, per quart 9¢ times 46½ quarts	$4.1850
Deductions to 10th zone	
Station	.2325
Freight L. C. L. in 40-quart cans	.5232
Can service	.0300
Dues and advertising	.0300
Total deductions	.8157
Net Class I or fluid price, 10th zone	3.3693
Class II or surplus price:	
100% Class 2A. Cream value, Butter plus 20%. Class 2B. Butter value, Butter minus 5¢ plus 16⅔%.	
Average butter market	$0.480 per pound.
Plus 20%	.096
Price butterfat .576 times 3.7 lbs. butterfat	2.1312
Deductions: Dues and advertising	.0300
Net Class 2 or surplus price	2.1012
Final net price:	
70% at $3.3693 Class I price	2.3585
30% at 2.1012 Class 2 price	.6304
Final net price, all milk delivered	2.9889

The modified sales plan is of great importance to the dairy industry throughout New England. It will have far-reaching effects. It is quite a simple plan when it is well understood but may appear complicated to those who have not given it careful attention. We have worked out the following examples in an effort to make the operation of the plan more clear.

How the modified plan operates.—The operation of the modified plan is shown in the following table. The prices and percentages of surplus used in this and in the subsequent tables are merely to illustrate the principles under which the plan will operate and are not to be taken as actual prices which will be received when the plan is in force. The actual prices will depend on the price of class I milk, butter quotations and the percentage of surplus carried by his dealer.

A. Each producer receives a base equal to his average production in October, November, and December.

Example

Month	Production	Days
	Lbs.	
October	3,200	31
November	2,800	30
December	3,200	31
Total	9,200	[1] 92

[1] Equals 100 lbs. per day.

Base	100 lbs. per day
Double base	200 lbs. per day

B. All production up to double this base during the other 9 months will be included under the surplus plan and paid for at the net composite surplus plan price.

C. Production in excess of double the base will be paid for at the Class 2 or manufactured-milk price.

Example (based on June production and prices)

June production	9,000 lbs.
Double base, 30×200	6,000
Excess—Individual surplus	3,000 lbs.
Prices paid:	
6,000 lbs at $2.35 (composite price)	$141.00
3,000 lbs. at $1.75 (manufactured price)	52.00
9,000	$193.00
Average price	$2.15

Producers who have had their cattle tested for bovine tuberculosis between August 1 and December 31 will have special consideration in determining their modified-plan base.

EFFECT OF THE MODIFIED SURPLUS PLAN

A. Percentage of market surplus during the flush months will decrease because uneven producers making more than double their base will carry their own individual surplus.

B. The net composite surplus plan price will increase. Thus prices will be higher to producers delivering less than double their base.

Example: Present plan—All surplus plan producers share entire market surplus.

Purchases	2,000,000 lbs.
Sales, fluid	800,000
Market surplus	1,200,000 lbs.
Percentage surplus	60%
Prices paid:	
40% @ $2.85 Class 1 or fluid price	$1.14
60% @ $1.75 Class 2 or surplus price	$1.05
Final price	$2.19

New plan—Surplus plan producers share market surplus up to double base—beyond this amount individual stands own surplus.	
Purchases	2,000,000
Purchases over double base	550,000 individual surplus
Purchases under double base	1,450,000
Sales fluid	800,000
Market surplus	650,000
Percent surplus	45%
Prices paid:	
55% @ $2.85 Class 1 or fluid price	$1.57
45% @ $1.75 Class 2 or surplus price	.78
Final price	$2.35

C. Payments for total product by the dealer is the same under both plans. Distribution of payments to the individual producers is different. The producer who makes milk nearer to the fluid market requirements receives the higher composite market price. The producer who makes milk without regard to market requirements receives the manufactured-milk price for production above double base.

Examples of price variation of eight producers under the new plan

Producer	June production base	Double base pounds at $2.35	Pounds at individual surplus $1.75	Total return	Per hundredweight
A	200 to 100 or less				$2.35
B	250 to 100	200-$4.70	50-80.88	$5.58	2.23
C	300 to 100	200- 4.70	100- 1.75	6.45	2.15
D	400 to 100	200- 4.70	200- 3.50	8.20	2.05
E	500 to 100	200- 4.70	300- 5.25	9.95	1.99
F	600 to 100	200- 4.70	400- 7.00	11.70	1.95
G	700 to 100	200- 4.70	500- 8.75	13.45	1.92
H	800 to 100	200- 4.70	600-10.50	15.20	1.90

The composite prices as used in the modified surplus plan, explained in the foregoing, made it possible for cooperative and privately owned creameries, having a high percentage of whole milk sales in Boston, to pay their producers a higher blended price than the N. E. M. P. A. producers received. To overcome this difficulty a definite base rating plan was adopted September 1, 1931, whereby a class I price was paid each producer for all base milk and a lower or class II price was paid for all milk in excess of a producer's base, delivered to a distributor. Furthermore, total basics or quotas would be kept in line with fluid milk sales of cooperating distributors. Now, if a producer kept his production in line with his basic allotment, he would receive a class I price for practically all the milk he produced. The cooperative and privately-owned creameries, which had built their fluid milk business largely on a cut-price basis, it was thought, would find it difficult to continue this policy and

meet the class I price quoted by the N. E. M. P. A. This new plan establishing basics, as described to members, follows:

PLAN OF OPERATION IS DEVELOPED

Basic rating plan governing the sales of milk of members of the N. E. M. P. A., effective Sept. 1, 1931 and until further notice

DEFINITIONS

1. "Basic Rating" shall be that quantity of milk determined in the manner hereinafter set forth for which each producer shall receive the Class I or fluid milk price.

"Excess" shall be that quantity of milk delivered by the producer over and above the basic rating established for that producer, and for which such producer shall receive the Class II or manufactured milk price.

"Nearby Territory" shall include those producers whose deliveries of milk are made by team or truck from the farm to the distributor's city plant.

"Grade A Territory" shall include those producers furnishing the distributor with milk of Grade A quality from dairies which hold Grade A permits from the Board of Health.

"Modified Surplus Territory" shall include all producers from whom milk is purchased and not included in nearby or Grade A territory.

2. *Methods of establishing basic rating.—a.* Nearby territory. Effective September 1, 1931, producers in the nearby territory shall receive the same basic rating that has been in effect during the period from January 1, 1931, through August 31, 1931—such rating to continue in effect through December 31, 1931.

b. Grade A territory. Effective September 1, 1931, producers in the Grade A territory shall receive the same basic rating that has been in effect during the period from January 1, 1931, through August 31, 1931—such basic rating to continue in effect through December 31, 1931.

c. Modified surplus territory.—Effective September 1, 1931, producers in the modified surplus territory shall receive a basic rating—such basic rating to continue in effect through December 31, 1931. This basic rating shall be computed in the following manner:

(1) Determine the average amount of milk delivered to the company during the months of October, November, and December, 1930, by all producers still delivering to the company. Add to the total of these averages the total sum of bases established under the Modified Surplus Plan heretofore in effect for all producers who started delivering milk subsequent to December 31, 1930.

(2) Determine the average daily fluid milk sales of the company for the first 6 months of 1931 which will be available for distribution.

(3) Determine the percentage relationship that these available sales under (2) bears to the total average daily deliveries under (1).

(4) This percentage, as above ascertained, shall be applied to the average daily deliveries of each produced as determined under (1) to determine the basic rating for each producer.

(5) For your company, it has been determined that the average daily sales as above stated is — percent of the average daily production.

3. *Method of determining basic ratings for the period January 1 through December 31, 1932.—a. Nearby territory.*—Effective January 1, 1932, the basic rating will be the average of 2 years—namely, the basic rating in effect in 1931 and the total production, up to the established rating, of July, August, September, October, and November 1931. Any producer delivering excess over the established basic rating will receive an increased 1932 basic rating if, when subjected to the average surplus of the company for the above-named five months, the average production of the above-named five months results in such increase. Such increase shall be averaged with the average in effect in 1931 to determine the 1932 base rating.

b. Grade A territory.—Effective January 1, 1932, the basic rating will be the average of 2 years—namely, the basic rating in effect in 1931 and the total production, up to the established rating, of September, October, and November 1931. Any producer delivering excess over the established basic rating will receive an increased 1932 basic rating if, when subjected to the average surplus of the company for the above three months, the average production of the above-named three months results in such increase.

c. Modified surplus territory.—Effective January 1, 1932, the basic rating will be the average of 2 years—namely, the average of the deliveries of October,

November, and December 1930, and the deliveries of September, October, and November 1931, correlated to sales in the same manner as outlined in *c* (2) under paragraph 2 with the exception that the average sales for September, October, and November 1931, shall be substituted for the first six months of the year. Such increase shall be averaged with the average in effect in 1931 to determine the 1932 basic rating.

4. *Rules and regulations.*—Any producer whose cows undergo an initial test for tuberculosis under Federal and State supervision can hold the established basic rating for six months after date of test. It is understood that basic ratings go with the farm were established in case of transfer of farm to another owner. Basic ratings cannot be bought, sold, or transferred, except as provided. There can be only one basic rating for a farm. Producers changing from one buyer to another will receive the same basic rating with the new buyer as existed with the old buyer. Milk cannot be bought, sold, or transferred between producers, nor can producers sell any of their product to other dealers in fluid milk form. Violation of this regulation will cause all producers involved to forfeit their basic ratings. These forfeited ratings will be distributed to other producers. Adjustment of ratings made for any purpose whatsoever shall be by agreement between the N E M P A and the distributor.

5. *Reports.*—It is agreed that each distributor will make the following reports to the N E M P A on forms provided by the N E M P A on both members and nonmembers:

a. Basic ratings in effect for each producer September 1, 1931, and January 1, 1932, and for new producers' ratings as added.

b. Changes in basic ratings for each producer as of August 1, 1932.

It is further agreed that should questions arise at any particular shipping station with respect to adjustments of ratings, the distributor agrees to furnish information promptly on adjustments that have been made and reason for making them.

c. Purchases of basic milk delivered monthly or semimonthly.

d. Purchases of milk in excess of basic ratings monthly or semimonthly.

e. Fluid-milk sales to be reported under a sworn statement monthly or semimonthly to the Milk Administrator and subject to verification by the Milk Administrator for the months to be used in establishing basic ratings. For the period not covered by these reports on fluid-milk sales, representatives of the N E M P A will be furnished at the office of the distributor with the fluid-milk sales.

6. *Prices.*—Each producer shall receive for all milk up to basic rating the Class I zone price as agreed upon between the N E M P A and the distributors. For all milk in excess of basic rating, he shall receive the Class II zone price as agreed upon between the N E M P A and the distributors.

From a report on the annual meeting of the New England Milk Producers' Association in the November 1932 issue of the New England Dairyman, the following observation was made on the effectiveness of the base rating plan in bringing production more in line with sales:

* * * The operation of the plan has resulted in a lowering of the June peak of production and the raising of the fall deliveries of milk. The difference between the low and high points has decreased. Although the production line is not a straight one, it is much better than it was three or four years ago before producers began to produce milk more nearly the way the fluid milk market required its supply. The flush point of production is not as high, and short-production period is not as low. The extent to which the change has taken place in the production line is shown by the fact that in 1927 deliveries per day per dairy for the high period was nearly double the low period, while this year deliveries were less than one-third higher for the high period than for the low. The percentage which the high period was above the low period for the past six years is shown by the tabulation below:

Year	*Percentage high period was above low period*
1927	99
1928	80
1929	62
1930	36
1931	34
1932	29

The New England Milk Producers' Association made no fundamental change in the base rating plan for 1933 except to set forth the determination of basic quotas as indicated in the March 1933 New England Dairyman as follows:

The ratings of each producer were determined on the same method as was used the previous year. It was to take the average deliveries of milk for each producer in September, October, and November 1932, plus their deliveries for the same months in 1931 and adjust that average delivery to the sales of the dealer to whom the milk was sold for September, October, and November 1932. Each producer will be paid the Class I price for the remainder of 1933 for the amount of rated milk which was established for him by the above method. Any milk he delivers in excess of that rating will be paid for at Class II prices.

One of the reasons that the original New England Dairies, Inc., venture had failed, was that producers belonging to the various units of the federation were not paid on the same basis. In other words, some of the cooperative creameries who were members carried so much surplus that the return to their producers was relatively low. To overcome this difficulty, Consolidated Dairies,[36] composed of former members of the above-mentioned New England Dairies, when it began operations set up an equalization plan effective June 1, 1933. It applied to all milk shipped to Boston by Consolidated Dairies' producers except that from local producers in the vicinity of Boston whose milk was trucked in. A more complete discussion of this equalization plan follows. Under equalization all Consolidated Dairies' producers shipping milk to Boston, except the local producers referred to above, would receive the same price for their milk less differences in the deductions for hauling, quality of product, etc.

The Federal agreement and license effective November 3, 1933, established a uniform method of paying all producers shipping milk to Boston, as well as placing all distributors on a uniform basis of payment for the milk used. In other words, the base rating and classification plan was applied to the whole market in addition to an equalization plan. The Federal Market Administrator was to administer the regulatory measures in accordance with the terms of the license.

Each producer was assigned a base quota according to past production, as prescribed in the license. It was necessary to set up bases for each producer in order to apportion to each association of producers and to individual producers a proper share of the fluid-milk sales in the market. On the basis of the Federal Administrator's apportionment depended the total amount of money to be allocated by each association to its members. After the money due from distributors for the milk they purchased had been credited to the various associations, such money could be distributed to the producer members according to any price plan that the association might wish to use. Consolidated Dairies continued its own base rating plan and its producers were paid according to the bases they had established over a period of years. As it appears that 70 to 80 percent of the milk going into Boston was controlled by Consolidated Dairies, most of the producers were being paid according to a

[36] Later changed to New England Dairies, Inc.

base-rating plan. A description of how a producer member of Consolidated Dairies was paid during the first period of Federal market supervision as given in appendix A will demonstrate the various computations involved, as explained to members in the cooperative's publication.

Under equalization it is possible to pay all producers in a milk-producing area on a uniform basis. This, if susceptible of enforcement, would be an important stabilizing influence in any milk market. Equalization cannot be applied to a market unless the distributors participating pay for their milk supply according to use. In the Boston market the larger distributors had been paying for milk on some sort of a use basis for many years, but their combined sales had not been equalized among all the producers. As a consequence some producers supplying milk to a distributor having a high utilization in class I would receive a relatively high blended price, whereas other producers supplying milk to a distributor having a low utilization in class I, would receive a relatively low price. It was such a situation that influenced Consolidated Dairies to adopt equalization of sales among the producers of all of its units. However, equalization has its greatest stabilizing influence, of course, when it is applied uniformly throughout a market area.

The principle of equalization is easy to understand. An individual distributor is applying the principle of equalization when he pays each of his producers according to his total utilization of all milk purchased. If his class I milk sales amount to 80 percent and class II sales 20 percent he does not pay 80 percent of his producers a class I price, assuming their production is the same, and the remaining ones producing 20 percent a class II price, but he pays each producer a price per unit computed on the basis of paying 80 percent of the class I price and 20 percent of the class II price.

In applying the principle of equalization to an entire market, however, difficulties begin, although in theory it should be a simple matter. Much of the difficulty comes from an inability of some participants to understand the plan and from an unwillingness on the part of the others to forego some advantage formerly enjoyed. It is necessary for the participants in any market equalization plan to be good cooperators—not only the producers, but the distributors as well. This failure on the part of some to cooperate is the real weakness of the plan.

The application of the equalization plan to the entire market involves merely the pooling of all the milk purchased by all the distributors and computing of the blended price to be paid on the basis of the use made of all the milk purchased by all such distributors. All producers are then paid this blended or average price.

For example, assume that the market price for class I milk is $2.50 per hundredweight and for class II it is $1.50 per hundredweight, and the respective utilization in a market for four distributors, A, B, C, and D is 50, 60, 70, and 80 percent in class I, or a market average of 65-percent utilization in class I. The composite price for the market would then be:

65 percent×$2.50 equals	$1.625
35 percent×$1.50 equals	.525
	$2.150

This market price of $2.15 per hundredweight is that which all distributors are supposed to pay each producer. As distributor A had a utilization of 50 percent class I, at $2.50 per hundredweight and 50 percent class II at $1.50 per hundredweight, or an average of $2 per hundredweight, his payment to producers of $2.15 per hundredweight would result in a loss of 15 cents per hundredweight. Distributor D, however, whose utilization was divided 80 percent and 20 percent between the two classes, would have a utilization price of $2.30 per hundredweight, and, since he is to pay producers only $2.15 per hundredweight, he must pay into the equalization fund 15 cents per hundredweight which is used to reimburse distributor A. As is apparent, all distributors under the plan have the same purchase cost and all producers receive the same base price per unit.[37]

The same procedure, although in actual practice far more complex, is applied in the Boston market with exceptions as stated heretofore. The process of equalization is now carried on through the supervision of the Federal Market Administrator, who gathers and disseminates all information necessary to make it function.

The Boston license was amended as provided for under an "order" from the Secretary of Agriculture, effective February 9, 1936. The order calls for an increase in the minimum price of milk, for equalization, and for a uniform rating plan. The provisions and requirements of the order are practically the same as the previous marketing agreement. Previous to the order each producer association paid its producers under any plan it saw fit to use, but since this order became effective the participating cooperative associations have agreed to use one method of paying producers throughout the market and that is to be the base rating plan entirely supervised by the Market Administrator. The use of equalization was to continue as before. The method used by the Market Administrator to arrive at the price to be paid producers for milk delivered during the period February 9 to 15, 1936, inclusive, is described in appendix B.

As has been stated, the success of any type of market supervision hinges largely on whether producers and distributors abide by the rules. In the Boston Milk Administrator's Review for June 1935 appears the following comment:

> These examples (of noncompliance) typify the difficult situation now prevailing in the market as the result of the inability of the Agricultural Adjustment Administration to obtain effective enforcement of the terms of the License in the courts in this district. In order to continue to maintain the License and the prices established thereby in this market, it is essential that all producers and producer-agencies selling to distributors in this market demand and insist that the distributors to whom their milk is sold, shall strictly comply with the terms of the license in all respects.
>
> It is inevitable that unless all distributors in the market comply with the terms of the License, the prices established under the License cannot be maintained, and that all producers whose milk is sold in the Boston market will have to take substantially lower prices. It is up to the producers themselves to determine whether the benefits which they have received from this License

[37] Without equalization, producers supplying distributor A would receive a composite price per hundredweight of milk of $2 and producers supplying distributor D would receive a composite price of $2.30 per hundredweight of milk. Such a market situation is obviously dangerous to market stability, for producers such as those selling distributor A are looking for an opportunity to sell their milk for something more than $2 per hundredweight and distributors in distributor D's situation are looking for milk at a lower price.

justify their insistence that the dealers to whom they sell shall conform thereto.

Then follows a list of 17 dealers who have (1) not made reports, (2) not made equalization payments, and (3) not made deduction payments to the Administrator as required under the terms of the license.

The Boston Market Administrator's Review contained an article in the October 1935 number which frankly discusses some of the problems confronting this official. While some of his difficulties may be peculiar to Boston, in general the article could be applied to many other markets. The Commission believes that this article is valuable to all those interested in problems of controlling milk distribution. It follows, in full:

TEMPORARILY HIGHER PRICES MAY RESULT IN EVENTUAL LOSS TO PRODUCERS

It has been reported to the Administrator's office that a Boston Milk Distributor, who is not complying with the terms of the Federal License, recently sent a letter to his producers which read as follows:

"For the last several months as usual we have paid our farmers more for their milk than the Federal Control Administrator has told us to pay, and likewise more than our competitors have paid their farmers. We expect to continue to pay our farmers more than our competitors pay.

"Competition would like to have you believe that we are cutting the price in the city but we are not—that is merely one of their excuses for lowering the price.

"We opposed the drop in price because we did not want the price to be reduced and we hope the price will be advanced soon."

Obviously the purpose of such a letter is to induce farmers to believe that the distributor is acting in the farmers' interest and attempting to obtain for the producers a higher price for their milk. If the distributor were complying fully with the terms of the Federal License, and still paying a higher price than his competitors to producers, this would be true.

However, distributors in the Boston Market who are not complying with the Federal License, with respect to whose business we have sufficient information to form a judgment, are without exception obtaining their milk at less than the prices specified in the License even though the net returns to their farmers may be higher than that of complying dealers. If such dealers were not obtaining their milk at less than the established prices, there would be no financial advantage to them in refusing to comply with the License. Furthermore, the ability of distributors not complying with the License to obtain milk from producers at less than the prices established in the License, is tending, as described below, to reduce the net returns to all farmers, including the producers selling to such dealers.

Higher price but lower cost.—The milk-marketing problem in New England will not be solved until farmers understand how it is possible for a distributor to pay a higher composite price for milk than his competitor in the country, and yet have a lower cost of fluid milk in the city. Such a circumstance is entirely possible and even probable, whenever the price for fluid milk is substantially higher than the value of milk for manufacture into cream.

A few simple examples will illustrate the situation. For the purpose of these examples, we will simply use the Class I and Class II prices and the composite price plan. The base rating plan does not change the net amount of money to all producers, but simply makes the distribution between farmers somewhat different.

Let us assume that the net Class I price in the 191–200-mile zone, after deduction of freight, station and other charges is $2.25 per hundredweight, that the Class II price is $1, and that 50 percent of the milk is being sold as fluid milk and 50 percent is being manufactured into cream. These prices and percentages are very close to those actually existing in the market at the present time. In this example the return per hundredweight to producers by a distributor participating in the market pool will be as follows:

50 lbs. as Class I milk at $2.25	$1.12
50 lbs. as Class II milk at $1	.50
Composite price per hundredweight	$1.62

While of course the particular percentage applicable to the distributor who wrote the above letter is not known we do, nevertheless, know from reports made for several months by some of the distributors not now complying with the License and from statements publicly made by other distributors not complying with the License, that such distributors frequently do adjust their purchases of milk from producers so that they are able to sell at least 90 percent of their actual purchases as fluid milk in the city. This adjustment of purchases is sometimes accomplished by dropping some of the producers at the beginning of the flush season in the Spring and then buying from additional producers as production declines during the Fall and Winter. In some cases such distributors do not depend entirely upon the milk from their own producers, but purchase some milk from other distributors or cooperative organizations during the short season.

"Holding the umbrella."—Probably it does not need to be pointed out that if this practice of adjusting purchases to Class I sales without participation in the equalization pool were followed by all distributors, there would be many producers with no fluid-milk market most of the year. During the past summer in the Boston milkshed, there has been more than twice as much inspected milk as there have been sales of whole milk in the city. If all dealers limited their purchases to their fluid-milk needs and did not participate in any equalization pool, there would have been such a scramble among farmers to get into the favored half with a fluid-milk outlet that no dealer would have had to pay much more than the Class II price for his milk. Thus, this practice can be followed by a part of the distributors only if the remainder of the market is willing to handle most of the excess milk and maintain a favorable Class I price. From this situation, there has developed the commonly-heard expression that "the rest of the market is holding the umbrella."

If a distributor who is not complying with the License is selling 90 percent of his purchases from his producers as fluid milk, let us see how much he would be able to pay to his producers without having his milk cost him any more than a distributor complying with the License. His composite price per hundredweight would be figured as follows:

90 lbs. as Class I milk at $2.25	$2.02
10 lbs. as Class II milk at $1.00	.10
Composite price per hundredweight	$2.12

It will be seen that with the present prices and proportion of Class II milk in the market as a whole, such a distributor's Class I milk in the city would not cost him any more than that of complying distributors even if he paid 50¢ per hundredweight more to his producers. If he paid them 15¢ per hundredweight more than his competitors who are complying with the License, he would be able to make to the farmers such a statement as is contained in the first paragraph of the letter quoted above. Such a distributor would have an advantage of 35¢ per hundredweight over his competitors in his cost of fluid milk in the city.

This 35¢ advantage the distributor may deal with in either of two ways. He may pass it on to the consumer, thereby tending to lower the level of prices in the market, or he may retain the 35¢ as an additional margin of profit. While the distributor sending the letter printed above states that he is not cutting the price, there are many non-complying distributors who are making this use of their advantage in buying. Regardless of the use made of this price advantage in buying, other distributors object vigorously against paying any more for their Class I milk than their competitors who do not comply with the market plan, and demand correspouding price reductions.

If a distributor who is selling 90 percent of his purchases as Class I is really sincere in wanting to obtain for his producers the highest possible price, and for his part is willing to pay for his fluid milk the going price in the market, his net return to his producers will be 50¢ per hundredweight higher than his competitors.

In practice, very few if any distributors buying in this way pay sufficiently more to their producers so that their cost of Class I milk is equal to the established price in the market. If the amount of milk purchased in this way increases, more Class I sales of milk are removed from the market pool and net returns to producers selling to complying dealers are lowered. Thus the producer selling to complying dealers gets a lower composite price, and yet the cost of milk to his dealer is higher than that of competitors.

Unless sufficient control is established in the market to require all dealers to account for their milk at the established prices, there is only one cure for the situation. That cure is to remove from the picture the element which makes such practices profitable, or, in other words, to drop the Class I price nearer to the level of the Class II price. This remedy injures all producers severely. It should be unnecessary to go through such an experience again in the Boston milkshed, but in the absence of enforceable control by either producers or governmental agencies, the market is drifting toward this undesirable and only temporary solution of the problem.

Effect of a price drop.—It will be noted from the distributor's letter quoted above that this distributor opposed a drop in price last July. It is very much to the advantage of such a distributor to oppose a reduction in the Class I price. Before the reduction on July 16, the net Class I price in the 191–200-mile zone was $2.83 per hundredweight, while the Class II price was approximately $1.00. At that time the above example would have worked out as follows:

Complying Distributor

50 lbs. as Class I milk at $2.83	$1.41
50 lbs. as Class II milk at 1.00	.50
Composite price per hundredweight	$1.91

Non-Complying Distributor

90 lbs. of Class I milk at $2.83	$2.55
10 lbs. of Class II milk at $1.00	.10
Composite price (per hundredweight)	$2.65

It will be seen that before the price reduction, the non-complying distributor had an advantage of 74¢ per hundredweight if he paid his producers the average price in the market. As the Class I price drops, the advantage of not complying with the License is lessened. Some advantage remains until the Class I price is reduced approximately to the level of the Class II price.

It will be seen from these examples that even if a distributor pays to his producers a price somewhat in excess of that paid by complying distributors, *such producers are actually receiving a lower composite price than all producers would receive* if the Class I price were 1¢ per quart higher.

Conclusion.—When producers receive letters similar to the one herein quoted, they may well keep in mind that it is very much to the advantage of a non-complying distributor to have the rest of the market maintain a high Class I price, that such a distributor's actual cost of fluid milk is likely to be much less than the established market price even if he pays them a small premium, and that *their price with the premium added is likely to be less than all the producers might otherwise be receiving.*

The problem of controlling any large milk market is apt to be very difficult until all the producers realize that the acceptance of a slightly higher price for their milk from distributors who are not observing the established rules in the market is likely to result eventually in a lower price to them as well as to all other producers in the milkshed.

SECTION 6. THE BALTIMORE MILKSHED

The Baltimore milkshed comprises six counties in the State of Maryland and two in Pennsylvania. Both Philadelphia and Washington draw upon territory adjoining and interlocking with the Baltimore shed for their supplies.

In the whole State of Maryland cash milk income accounts for about 30 percent of cash farm income. Cash milk income in 1929 was $21,281,000 and declined 34 percent to $14,045,000 in 1932 and declined 38.3 percent from 1929 to $13,125,000 in 1933. Milk income in 1934 was $15,655,000 or 19.3 percent above 1933. Cash farm income in 1929 was $86,025,000 and declined 52.1 percent to $41,166,000 in 1932. Farm income was $45,127,000 in 1933 and $53,752,000 in 1934, 9.6 percent and 30.6 percent, respectively, above 1932 income. Nineteen hundred and thirty-four cash milk income was 26.4 percent below 1929 and cash farm income was 37.5 percent below 1929. As is true for each of the areas covered in this report, during the 6-year period 1929–34, farm income was lowest in 1932 and milk income lowest in 1933.

The increase of 19.3 percent in cash milk income in the State of Maryland during 1934 is accounted for by a 20.4-percent increase in the prices received by producers for their milk. The average price per hundredweight of milk and milk equivalent sold was $2.11 in 1933 and $2.54 in 1934.[38] The increase in cash farm income is also due to increased prices for farm products, assuming price changes in Maryland were similar to those for the United States.

Estimated milk production declined 3.2 percent, from 783 million pounds in 1929 to 758 million pounds, in 1934. Production per cow in Maryland declined each year (except in 1931), being 4,550 pounds in 1930 and 4,120 pounds in 1934. Production per cow in the Baltimore area was 5,392 pounds in 1930 and 5,083 in 1931. The cost of grain and concentrates fed to cows increased during 1933 and 1934, which suggests a reason for the decline in production per cow. Maryland cows derive about 36 percent of their feed from pastures.

Sales through the Maryland State Dairymen's Association[39] in 1931 were $6,814,321.41 and estimated to be 97 percent of all sales in Baltimore.[40] It is also estimated that the association handles about 75 percent of fluid sales at the present time. Sales of fluid milk and cream through the association declined each year from 23,806,461 gallons in 1930 to 20,015,430 gallons in 1933, a decline of 16 percent for the period. Fluid sales in 1934 were 10 percent higher than in 1933, and 1935 sales were 20,648,817 gallons, 13.3 percent below 1930. Total sales remained fairly level between 1930 and 1932; class III sales increased as fluid sales decreased. Then in 1933, class III sales and total sales both declined. The 1934 fluid and total sales were higher than in 1933 and 1935. Between 1930 and 1935, class III sales declined 0.2 percent and all sales declined 11.3 percent.

Sales by the Maryland State Dairymen's Association were $8,453,979 in 1930, decreasing each year to $4,474,314 in 1933, a decline of 47.1 percent for the 4-year period. The 1934 sales of $5,226,587 were 16.8 percent higher than 1933, while 1935 sales were $5,408,621 or 36 percent below 1930.

About 48 percent of the milk moving into Baltimore was hauled by truck directly from farms in 1930 and 1931 and about 6 percent by

[38] Prices per 100 pounds for milk sold at wholesale, retailed by producers, butterfat sold, and farm butter sold, Division of Crop and Livestock Estimates, U. S. Department of Agriculture.
[39] Now the Maryland Cooperative Milk Producers, Inc.
[40] National Cooperative Milk Producers' Association, Historical Series, no. 2, July 1, 1932.

railroad. Approximately 46 percent came in from country receiving stations, most of it by tank truck.

There were 26,421 farms in the Baltimore area in 1935, only 1.7 percent more than in 1930. Farms fully owned by operators increased 1 percent; about 73 percent of the farms are wholly owned by their operators. All land in farms showed a small increase, but pasturage decreased. Values of farms in total and averages per farm and per acre declined over 30 percent between 1930 and 1935. Cow population in the area increased from 116,426 in 1930 to 125,813 in 1935, about 8 percent. The counties nearest to the market showed the largest increases.

The Baltimore sales area as defined by the Agricultural Adjustment Administration (license no. 6, Sept. 29, 1933) includes the city of Baltimore and adjoining territory almost equal in size to the production area. The population of metropolitan Baltimore in 1930 was 949,247.[41]

Baltimore has had a dairy council since 1920, but it was not until 1925 that it became affiliated with the National Dairy Council. The expenses of the council are shared equally by the association and by the distributors. The council has played an active part in selling the consumer on the value of milk as a food and in emphasizing the high quality of Baltimore's milk supply. According to a report of the dairy council for the year ending December 31, 1933:

> In 1929, our annual industrial pay roll in Baltimore city was $96,384,355; in 1932 it was estimated at $63,000,000 or a loss of about 34 percent. In 1929, our consumption of class I milk in Baltimore city was 17,731,800 gallons; in 1932 it was 16,354,900 gallons or a loss of about 8 percent. At the very bottom of the depression our loss in milk consumption was less than one-fourth as great as the loss in the community income. In the last half of 1933, our consumption again climbed to a parity with the 5-year average for this city.

Baltimore's milk supply comes largely from producer members of the Maryland Cooperative Milk Producers, Inc., and approximately 55 percent of its sales to consumers is distributed by the Fairfield Western Maryland Dairy, a subsidiary of National Dairy Products Corporation, and 11 percent by the next largest distributor, Cloverland Dairy. There are 21 regular milk distributors in Baltimore, 1 pasteurizing producer-distributor, and 3 raw-milk producer-distributors. Ten dairies have 30 subdealers; one has 8, another 5, and 17 are scattered among the other 8 distributors.

Sales of fluid milk in the Baltimore area are approximately 56,000 gallons a day, and it is estimated that 98½ percent of this is pasteurized and 1½ percent raw milk.

The history of the Baltimore milk market is one of peace and quiet as compared with most of the metropolitan markets of the country. Several reasons may be given for this. The cooperative has such a dominating position in the shed which it has carefully maintained by shrewd management that the price and surplus problems have been kept to a minimum. Secondly, there are comparatively few distributors in Baltimore, and the business opportunities for new ones are not particularly attractive. The importance of maintaining proper relationships between class and blended prices is fully recognized in this market. The success obtained by the cooperative suggests that its operations could be studied to advantage

[41] U. S. Census, Bureau of the Census, U. S. Department of Commerce.

by other milk cooperatives. This is not to be construed as meaning that the problem of distributor relations can be overlooked. If there are many distributors in a market the problems faced by a cooperative are greatly multiplied but distributor cooperation with the producer organization does much to make the work of the latter easier.

Sanitary requirements.—The Baltimore Health Department, it is said, has been successful in raising the sanitary standards among milk producers in the Baltimore shed. In 1930 tests for 1 month showed about 600,000 bacteria per cubic centimeter for unpasteurized milk. In 1935 the average bacteria count per cubic centimeter of incoming milk was 70,000 and the average bacteria count per cubic centimeter of milk delivered to the consumer was approximately 900. Of particular interest is the fact that the emphasis is placed primarily on proper handling of milk on the farm and not on requiring each producer to buy expensive equipment.

On July 22, 1932, the following provision of an ordinance became effective:

> Dairy Farm Permits and Dairy Plant Permits to ship milk and milk products to this city will be issued only for those farms and plants that are located within the inspection area of Baltimore and at a distance not greater than 50 miles from this city.

This provision effectively closed the market to outside milk and cream as long as a local supply was available. In this connection a statement made by the secretary of the Maryland Cooperative Milk Producers, Inc., in his annual report of January 26, 1935, is interesting:

> Due to the high quality of our product we were able to market 3,148,574 gallons of milk in the form of cream to local ice-cream manufacturers during the past year. Through the cooperation of the health department the use of cream produced in other areas, not under their direct supervision, is prohibited at all times when this market has an ample supply. This protection to our market is very important, and especially so during the past year when most eastern markets were glutted with western cream, selling at times at a very low level.

In 1935, however, the commissioner of health was enjoined from prohibiting the sale of outside cream, if produced under comparable regulations.

SECTION 7. THE MARYLAND COOPERATIVE MILK PRODUCERS, INC.

As previously stated, the Maryland Cooperative Milk Producers, Inc.,[42] controls the bulk of all milk going into the Baltimore market. Its dominant position, which it has so carefully maintained, has made it one of the leading milk marketing cooperatives in the country. Reorganized in 1918 as a marketing organization, it had a consistent growth in membership up to the depression. Its approximate membership early in 1936 was 3,375. When a new producer's contract was adopted effective June 1, 1935, only 12 fewer signed it than signed under the old contract. Although the first contract called for a signed note to the amount of $1 for each cow or a minimum amount of $15, and although these were signed by

[42] Previous to June 1, 1935, this organization was called the Maryland State Dairymen's Association. The change was made to comply with the Maryland Cooperative Marketing Act requiring a cooperative marketing association to have the word "cooperative" in its title.

the producers, none has ever been collected. The new contract omits this provision entirely. There are comparatively few producers in the Baltimore milkshed who are not members of the association.

Before 1930 the association is reported to have had under its control practically 100 percent of the producers in the Baltimore area. In 1932 the asssociation membership stood at 3,674 while by April 1935 this number had dropped to 3,385. The provisions of the Federal Milk Market Agreement and License, it is claimed, disturbed conditions in the Baltimore milkshed, increased the activities of flat-price buyers not dealing with the association, and also encouraged old members to drop away from the association and new producers to enter the market.

The association negotiates with distributors as to the price to be paid for milk. When no decision can be reached an arbitrator is chosen by mutual agreement and his decision is accepted as final. It is interesting to know that in 1919 an attempt was made to use "cost of production" as a basis for setting the price of milk. The method, however, was found to be impractical.

Another significant action was taken by a joint committee of dealers and association representatives when they recommended in 1919, that milk should be bought by distributors on a butterfat basis and that the standard test should be 4 percent with a butterfat differential to be paid for each one-tenth percent above or below the standard. In addition all testing was to be done by an independent laboratory supported jointly by producers and distributors. The association also has its own laboratory for check-testing purposes. The independent laboratory has been instrumental in removing one source of ill-will between producer and distributor, namely disputes over butterfat content.

For the purpose of meeting operating expenses a brokerage charge of one-tenth of a cent per gallon was made beginning in 1918, on all milk shipped by members. As this was found to be insufficient the brokerage charge was increased to one-fifth of a cent per gallon on May 1, 1920. Another increase to 1 cent per gallon in February 1921, was prompted by the fact that the association held itself responsible for all unplaced milk, and the additional charge was to cover such contingencies. In October 1921, the brokerage deduction on all milk going through country receiving stations was reduced to one-half cent per gallon, but the 1-cent deduction on milk shipped direct into Baltimore was retained. These deductions were still in effect at the time of the Commission's inquiry. It was claimed that the higher deduction for direct-shipped milk was due to the fact that it caused the association more work than did the milk delivered to country receiving stations.

In 1921 the association built a manufacturing plant to take care of any milk that it could not place with the distributors. The distributors, according to officials of the cooperative, then came to the conclusion they could and would handle all the unplaced milk, offering the association a better price than they could have obtained if they had processed the milk. Although the plant has never been used except for storage purposes, the association states that it has been a continual reminder to the distributors that the association can take care of all the milk of its producers.[48]

[48] The efficacy of this small plant as a deterrent upon distributors is open to question. It is believed that the general market peace that has prevailed in Baltimore is too valuable to be destroyed thoughtlessly, and this together with the opportunity for profits in handling the surplus for the cooperative are more impelling reasons for continuing the present arrangements.

The association has a reserve fund which is accumulated for protective purposes, as for example, to pay producer members during times of trouble with distributors or even, if ever deemed necessary, for buying or building facilities for handling milk. In 1931 the fund had reached a total of approximately $900,000. This is a 6-year revolving fund, and in 1927 payment was begun to each producer who had an equity in the reserve fund of 1921. On October 1, 1935, the association paid $108,308.68 to members in the form of refund checks. This sum represents the unexpended income that was placed in the reserve fund for the fiscal year 1928–29.

Both the basis on which producers are paid and the method of handling surplus milk in the Baltimore shed are of unusual interest. The association is a pioneer in the use of the base and surplus plan, for it first used this system of payment in 1918. There has been no hesitancy in adapting the plan to the needs of the market. It has been used as a means of assuring adequate production of milk throughout the year and for placing the responsibility of producing excess milk on the farmer who produced it.

An unusual feature of the Maryland Cooperative Milk Producers operations is its method of controlling all the surplus milk produced by members. Milk distributors buy their requirements and the balance is retained by the cooperative. If a distributor should overestimate his needs, he can return the excess. As much as possible of the surplus is processed at country stations, and freight to Baltimore is thereby reduced. Such surplus as reaches the city is processed there, at a plant of one of the distributors.

The following discussion gives additional details of the method by which the surplus milk of the Maryland Cooperative Milk Producers, Inc., is handled.

Under an agreement entered into by the Maryland Cooperative Milk Producers Association, Inc., with the Baltimore distributors, all class III or surplus milk belongs to the association and is processed by the dealers for the account of the association. During 1935 dealers operating country stations were allowed 3½ cents per gallon on all milk received at country stations. This 3½ cents was to cover the country station operating cost, including processing cost, and freight, or hauling, costs from country stations to city plants. In calculating the net earnings of dealers processing milk for the account of the association, as derived from this allowance of 3½ cents per gallon, four elements enter into the calculation: (1) Country station receiving expense; (2) country station processing expense; (3) freight and hauling; and (4) sales of the skim milk (in various forms) received from the processing of association milk, the distributor retaining the skim milk from milk processed.

The portion of the Fairfield Western Maryland Dairy Co.'s 1935 net earnings before providing for Federal income taxes that were derived from its milk business was equivalent to 16 percent of the total capital employed in its milk business, exclusive of appreciation. Approximately 20 percent of those earnings resulted from this arrangement for handling milk as agent for the Maryland Cooperative

Milk Producers, Inc. This company processes most of the association's surplus milk.

The arrangement between the cooperative association and the distributors for handling the surplus milk in Baltimore is regarded as a highly satisfactory business arrangement by the officials of the cooperative and also by officials of the large company which does practically all of the processing of this surplus for the account of the cooperative. While the cooperative is willing to permit any distributor in Baltimore to share in the handling of the surplus milk, as a practical matter only one company, the Fairfield Western Maryland Dairy Co., does most of the processing. In the past and, perhaps, occasionally at present, a few of the other companies have processed milk for the association, but the quantity is insignificant compared with that done by Fairfield. This distributor, processing milk for the account of the cooperative, is paid a flat price for this service of 3½ cents a gallon. As substantially all of the surplus is processed into 40-percent cream, there are substantial quantities of skim milk remaining from the process and this skim milk is retained by the processing company as a part of its compensation.

There is no dispute that this is a profitable business for the distributor. There are certain compensations to the members of the cooperative, however, from this arrangement which though they cannot be measured accurately in dollars are, nevertheless, important. The secretary-treasurer of the Maryland Cooperative Milk Producers Association testified before the Agricultural Adjustment Administration officials in Baltimore in December of 1933 that the association saved the difference between the freight on fluid milk from country to city and the freight on the cream. At that time only two distributors in Baltimore were processing milk for the account of the cooperative. The charge for this service paid to the processing distributor at that time was 4 cents a gallon; it has since been reduced to 3½ cents per gallon, as previously stated.

The cream derived from the processing just mentioned is all sold for the account of the cooperative. As most of the processing occurs at country receiving stations, 15 out of 16 of which are owned by the Fairfield Western Maryland Dairy Co., shipments naturally are made from those points. After the association makes a sale of cream, it orders the shipment to be made from any processing point it may select. Should the distributor have an inquiry for cream, it may make the sale only with the approval of the cooperative association which gives the necessary orders for the consummation of the transaction. The settlements between the manufacturing distributor and the cooperative are made each month.

Rebates on cream manufacturing.—During the period from September 1, 1927, to July 1, 1929, Baltimore distributors operating country stations were allowed a deduction of 5 cents per gallon for hauling and country-station services on all milk received at their country stations. From July 1, 1929, to October 1933, a deduction of 4½ cents per gallon was allowed. The association, realizing that this deduction of 4½ cents per gallon was excessive for the services rendered, particularly when much of the milk was not shipped, but was manufactured into cream, insisted on a refund. This was set at $2.50 per can on all cream shipped to other points than Baltimore, and $2.10 per can on cream hauled to Baltimore, thereby allowing

the dealer 40 cents per can hauling charge on cream hauled into the city.[44] From October 1933 to August 1934, the dealer was allowed to deduct 4 cents per gallon, and during the same period the association received a refund from the dealer of $2 per can on cream not hauled into Baltimore and $1.60 per can on cream hauled into Baltimore. In August 1934, under the second marketing license of the United States Department of Agriculture, the receiving station allowance was set at 3½ cents per gallon with no refund to the association.

An official of the Maryland Milk Producers, Inc., stated that this refund of $2.50 or $2.10 per can of cream prior to October 1933 and the $2 and $1.60 per can of cream from October 1933 to August 1934 did not stay in the funds of the association, but was returned to the producer through adjustments of the prices of surplus milk. Efforts were made by the association to get the Agricultural Adjustment Administration to stipulate a refund on cream such as was previously obtained, but to no avail. After the Federal license in Baltimore was abandoned, officials of the cooperative endeavored to obtain refunds from the distributors, but up to the time of the inquiry had not been successful.

Criticisms have been made of the arrangement between the cooperative and the distributors for processing surplus milk, but it is believed that much of this criticism is unwarranted. It should be kept in mind that the cooperative has the duty of disposing of all the milk delivered to it by its members and that the periods of heavy surplus are apt to coincide with surplus periods in other milksheds. Cream prices are highly competitive and the association must sell its cream in the competitive market. This condition is true of Baltimore despite the restrictions which the Health Department of Baltimore at one time placed on the use of cream from outside a given area surrounding the city of Baltimore.[45]

At present the association is using a dual-payment plan involving the base-and-surplus plan and a flat-price plan. Distributors pay the association for all milk used as class I and class II sales or all milk needed for fluid milk and cream purposes on a flat-price basis of 23 cents per gallon of 4-percent butterfat milk. The association in turn instructs the distributors to pay each producer on the basis of the base-and-surplus plan.

The returns to the producer is a composite price made up of the class I and class II prices set by the association and the price received for the surplus milk.

The price of 23 cents per gallon paid by the distributors was arrived at by negotiation between representatives of the association and the distributors. It is claimed by officials of the association that were it not for the activity in Baltimore of flat-price buyers not buy-

[44] The distributors do not pay the freight on cream shipped for the account of the association. On cream shipped or hauled a distance of over 60 miles, either the association or the buyer pays the freight. All sales of cream, when made by the dealer, are approved by the association before shipment as to terms, etc., and the question of freight is always part of the terms of the sale.

[45] The association, up to 1935, handled substantially all the surplus milk in the Baltimore area. However, in 1935, noncooperating dealers buying on a flat-price basis did handle some surplus milk in order to assure themselves of a milk supply throughout the year.

ing from the association the 23 cents per gallon price could be increased.[46]

According to the report of the secretary-treasurer submitted at the annual meeting of the association on January 25, 1936, the weighted average price paid producer members of the association for the year 1935 was 21.78 cents per gallon, f. o. b. city plants. This was more than 1½ cents per gallon greater than the price paid in 1934. The following tabulation, taken from this report, shows the quantities of milk produced, its utilization, value, and weighted average prices per gallon paid members for each year 1930 to 1935, inclusive:

Year	Production, gallons	Class I and II sales (fluid milk and fluid cream sales), gallons	Class III sales (manufacturing purposes), gallons	Total value of 4-percent milk f. o. b. city	Weighted average price 4-percent milk f. o. b. city in cents per gallon
1930	27, 995, 481	23, 806, 461	4, 189, 020	$8, 453, 978. 91	30. 20
1931	27, 554, 826	22, 495, 306	5, 059, 520	6, 814, 321. 41	24. 73
1932	27, 666, 691	21, 001, 747	6, 664, 944	5, 591, 944. 70	20. 21
1933	24, 772, 100	20, 015, 430	4, 756, 670	4, 474, 313. 72	18. 06
1934	25, 958, 197	22, 029, 553	3, 928, 644	5, 236, 586. 91	20. 13
1935	24, 831, 255	20, 648, 817	4, 182, 438	5, 408, 621. 32	21. 78

Source: Marvland Cooperative Milk Producers, Inc., First Annual Report, Jan. 25, 1936.

Attention is directed to the trends shown in the above tabulation, especially for those on production and class I and class II sales. The high weighted average price of 30.20 cents per gallon paid producers in 1930 is also worth noting, as is the drop to 24.73 cents in 1931 and to 20.21 cents in 1932. By 1933 the price was down to 18.06 cents per gallon, or more than 12 cents less than in 1930. This decline of more than 3 cents per quart suggests why producers complain about low income from milk production.[47]

SECTION 8. MILK SETTLEMENT PLANS IN THE BALTIMORE MARKET

The base and surplus plan as already stated has been used by the Maryland Cooperative Milk Producers, Inc.,[48] since 1918. The plan was designed primarily to level out production. This was first done by offering a higher price for milk used for fluid purposes as compared with milk used for fluid cream or manufacturing purposes. Each producer was given a certain quota of total fluid sales and any milk he produced in excess of that quantity was paid for at a lower price. This is usually referred to as paying for milk on a use or classification basis. From September 1, 1918, to September 1, 1932, the producers were paid on a two-class basis, viz, class I and surplus. After the latter date there were three classes, and each producer was allocated definite quantities for class I and for class II and any excess was paid for on a class III or surplus basis.

[46] It is also alleged that flat-price buyers with a high class I utilization are paying nonassociation producers from 19 to 20¼ cents per gallon of 4 percent butterfat milk, and that in June 1935 they were paying 15 to 16 cents per gallon of 4 percent butterfat milk.

[47] Retail prices in Baltimore were 14 cents per quart throughout 1930 and until April of 1931, when it dropped to 12 cents per quart. The next price drop occurred in May of 1932 to 11 cents per quart, at which level it remained until May 1933, when it dropped to 10 cents per quart. This 10-cent price was in effect for 6 months when it was raised to 11 cents. In 1935 the price was again raised 1 cent per quart, and the 12-cent price has been in effect ever since. These prices are those commonly charged for 1 quart of milk on retail routes.

[48] Previous to June 1, 1935, the Cooperative was known as the Maryland State Dairymen's Association, Inc.

The first base period used to determine each producer's basic quota was the low period of production in the year 1918, namely, the average of the months, September, October, November, and December. The average production per producer for these 4 months determined the quantity of base milk for which he would receive the class I price during the following 9 months of 1919. Any excess over a producer's quota received the lower excess, or surplus, price. The differential established between class I and surplus milk was 5 cents per gallon at first. The base period for 1920 was the average of only 3 months, October, November, and December 1919.

The following quotation from a history of the association reveals the effectiveness of the base and surplus plan in leveling production:

> This program had a marked effect on seasonal production. It leveled production throughout the year to the extent that, where some 65% of the total year's supply had been produced in the six months of spring and summer, as against only 35% in the fall and winter months, by 1922 the six-month periods contained practically no variation. In fact, study of the production figures reveals that by 1923 the highest average monthly production of the year was occurring in the base (fall) months, May and June only excepted.[49]

The original plan as put into operation contained the elements which led to marked modifications. The incentive to the producer to establish a high base for himself by increasing fall production stimulated production during the base period to such an extent that the plan had to be modified more specifically. In August 1923, the price of base milk and the prices of milk to consumers were both increased. The result was that the Baltimore market was flooded with milk in the base months of October, November, and December of that year. In order to correct this situation the association decided that beginning January 1, 1924, all members' bases should be their average production for the base months of 1922, with adjustments made for new shippers. At the same time an agreement was reached with distributors that they would report their monthly purchases and sales to an arbitrator.[50] Producers were assured that, as soon as expedient, payments to them would be resumed on the basis of their 1923 base averages.

The possibilities of the base and surplus plan as a means of influencing production was further demonstrated by the producer's reaction to the change in basics. As the 1922 averages were considerably below the 1923 averages, production decreased rapidly. By May 1, 1923, it was possible to assign the 1923 averages and to resume payments on that basis.

The restoration of the 1923 averages resulted in an immediate increase of production, for in June 1924, there was a 40.5 percent excess of production over fluid milk sales. By September 1, 1924, it was necessary for the association again to put into effect the 1922 averages which remained effective until the end of 1924.

The response of the producer to the base and surplus plan was not surprising, for any increase he could make in his basic quota during the base period meant increased returns as long as the base price remained the same. In other words, the price of milk to the producer

[49] National Cooperative Milk Producers' Association History Series No. 2, July 1, 1932.

[50] See ch. III, sec. 3.

could be manipulated by changing the base quotas just as effectively as if the price itself had been changed.

The experience with the base and surplus plan in 1924 demonstrated to the association the importance of the adoption by it of a definite marketing- and production-control policy. The plan decided upon for 1925, therefore, was that each producer was to receive a basic quota equal to his average production during the months of October, November, and December of 1921, 1922, and 1923. The total average base quotas of all producers for the 3 years plus adjusted averages for new shippers equalled approximately 100 percent of the fluid sales of distributors at the beginning of 1925. The policy of keeping total base quotas in line with total fluid sales has been continued to the present time. Adjustments upward have not only been made in keeping the total basic quantity in line with increased sales by the distributors to their customers, but adjustments have also been made downward when fluid sales by distributors decreased. An important feature of these adjustments has been that any producer who did not maintain his basic average during the current base period has been subsequently credited with a base equal only to his average reduced production during the current base period. Increases in basic quantities, when found necessary, have been given to those producers who had the highest percentage of class II milk in the last base period.

Sales were declining in 1931 and a 5-percent reduction of basics was put into effect. As sales continued to decline another reduction in basics of 5 percent was ordered effective June 1, 1932.

An increase in total production of 0.4 percent in 1932 over the previous year and a decrease of about 9 percent in fluid sales brought about a further change in the selling plan on September 1, 1932. The proportion of excess milk to fluid sales was becoming larger with a resulting wider spread between the class I price and the surplus price so that an increasing proportion of the surplus milk was used for other and less remunerative purposes than fluid-cream sales. In order to make the classes of milk more nearly fit market conditions, three classes of milk were established, effective September 1, 1932. The class II milk price thus reflected the sale of cream for fluid purposes and the price of class III milk reflected the price of cream for nonfluid purposes. The class II allocations were determined on the basis of the average quantity of surplus milk produced during 1931. This plan enabled the association to give those of its members having small basic allotments a larger class II quota. Any milk produced in excess of classes I and II was disposed of at market prices for manufacturing purposes. The three-price plan has proved successful, it is said, because it is more in line with actual market conditions.[51]

[51] The following quotation from the annual report of the secretary at the annual meeting, Jan. 27, 1934, discusses the association's payment plan in general and the change referred to above in particular, as follows:

"The matter of production control is an old story in the Baltimore Milk Shed. For the past sixteen years it has been advocated by the officials of your Association as the means of maintaining an orderly market and in obtaining a fair price to the producer of agricultural products. This has been accomplished through the use of the Classified Plan of marketing. It is with considerable pride that we find this plan adopted in practically every major fluid milk market in the United States as well as being recognized by the experts in the United States Department of Agriculture as being the most feasible plan in accomplishing the desired national results.

"The advantages of such a plan is found in its flexibility, thus lending itself to certain modifications in order to meet local or sectional conditions. Another advantage and by far the most important, is that it actually controls production without the necessity of imposing a processing tax on the product, which in all probability would be passed on to the already overburdened consumer or be borne by the producers by a reduction in the prices received for their product.

"An examination of our data pertaining to total production of milk in 1933 compared with 1932 clearly shows how the three-price plan has operated to advantage in our milkshed. Every producer should know that from the beginning, the purpose of the plan was to control the production of milk by giving each shipper his fair share of the fluid milk (Class 1) and fluid cream (Class II) market, together with a fair price for these allotments, as market conditions warranted.

"The result of this plan is that the majority of producers chose to produce only their share of the fluid market and not to produce any milk that would go into manufacturing channels. Consequently, our production in 1933 was 2,894,591 gallons less than in 1932. This is an average decrease of two and a quarter gallons per farm per day.

"The total volume of milk sold in the form of cream for manufacturing purposes in 1933 was 4,756,670 gallons as compared with 6,664,944 gallons in 1932; a decrease of 1,908,275 gallons."

[52] Seventeenth annual meeting of the Maryland State Dairymen's Association, Jan. 26, 1935, p. 3.

A Federal marketing agreement and license became effective in the Baltimore market on September 29, 1933. It provided that every class I shipper should have at least a base quantity equal to the percent of total production that was consumed as fluid milk in the base periods of 1931 and 1932. During these base periods the market was consuming 60 percent of the milk in fluid form. Thus, every producer whose basic average was less than 60 percent of his average production in the fall of 1931–32 was increased to 60 percent. Approximately 925 association members were affected by the change, and their total increased basics approximated 80 percent of the average daily production of association members. Under the same provision of the marketing agreement old shippers were given a class II allocation equal to 35 percent of their respective basic quotas. Producers were paid according to the relation of total base quantities to fluid sales and total class II allocations to class II sales. In other words, if fluid sales were only 90 percent of the total base quantities allotted then payment was made on the basis of 90 percent of class I. The same principle was applied to class II allocations.

The marketing agreement also provided for sales equalization. When a distributor had fluid sales above the market average he paid into the association adjustment fund; when his fluid sales were below the market average he drew from the adjustment fund an amount equal to his excess payments to producers. Sales of class II and class III milk were also equalized. In this way all distributors paid the same price for all the milk they used in each of the three classes.

Federal supervision in the Baltimore market ceased after a decision had been rendered November 16, 1934, by the United States district court for Maryland in the noncompliance case of *Royal Farms Dairy, Inc., et al* v. *Wallace, Secretary of Agriculture, et al* (docket 2265), to the effect that, first, the dairy purchased and sold its milk wholly within the State of Maryland and that none was mixed with other milk coming from or going to other States, and was, therefore, subject only to State control, and second, the terms of the agreement exceed the power granted the Agricultural Adjustment Administration by Congress.

A paragraph from a speech by the president of the association[52] will perhaps express the attitude of the association toward Federal market supervision in Baltimore:

Regardless of the act which a government may put into effect, experience tells us that our industry will never go forward without an agreement among

ourselves. This was clearly demonstrated last August following the issuance of the Federal license which provided for a considerable increase in price to producers. The Government at that time depended wholly upon enforcement for the successful operation of the license. The results are well nown to all of us. No attempt was made to foster an agreement of the industry as to policies and price which, in my mind, is the reason for their colossal failure in the Baltimore market. Look back over the 16½ years of our operations and you will note that our most prosperous years were those in which the dairy industry almost unanimously agreed on both policies and prices. Our prices did not decline until individual distributors as well as farmers withdrew from the general marketing plan. Our future prosperity will be determined by the ability of the various factors in the dairy industry to cooperate among themselves.

The milk-settlement plan now in effect in Baltimore was adopted after the termination of Federal supervision and has not been changed materially since that time.[53] The plan is different from that in the other markets studied in that distributors pay for all milk needed for class I and II sales on a flat-price basis; the association pays its producers according to their basic ratings and in addition disposes of all the surplus milk of its producers.

For all the milk a cooperating distributor uses in his business he pays 23 cents per gallon for 4-percent butterfat milk. The distributor does not concern himself with any surplus as the association takes responsibility for all of it, as will be hereinafter discussed. The association has 13 cooperating distributors.

Producers are paid on the basis of three classifications, class I, class II, and class III. The base quantities for class I and class II assigned each producer have been built up over a period of years as discussed above. Milk in excess of class I and class II is paid for at a surplus price. The prices received by producers for January 1936 were as follows:[54]

Class I, $2.78 per hundredweight or 24 cents per gallon.

Class II, $2.20 per hundredweight or 19 cents per gallon.

Class III, $1.62 per hundredweight.[55]

Each producer member of the association is assigned to a distributor who is buying through the association. The distributor is given a list showing the class I and class II basics for each of his producers. About the 23d of each month the distributor sends a report to the association showing the total production of all his producers up to that date. On the basis of that information the association notifies the distributor what percentage of the class I and class II basics is to be paid and authorizes the distributor what price to pay for each class of milk. The following letter is typical of those sent distributors by the cooperative advising them as to the basis on which they are to pay producers.

JANUARY 27, 1936.

GENTLEMEN: Under our present arrangements, it is our understanding that you are required to account to this Association on the basis of 23¢ per gallon for 4-percent butterfat milk f. o. b. Baltimore for all the milk produced by its members and sold to you. As you know this Association prefers that its members be paid on a classified basis, and it would appreciate it if you would act as its agent in distributing to its members the money which you are required by the said plan to pay to this Association. This Association has heretofore furnished you with the Class I and Class II allocations of its members who are shipping to you together with revisions thereof and as further revisions are hereafter made will promptly inform you of those.

Will you please, therefore, as agent of this Association and in accordance with such allocations, pay its members for January shipments at $2.78 per 100 pounds of Class I, $2.20 per 100 pounds of Class II, and $1.62 per 100 pounds of Class III. These prices for 4-percent butterfat milk, f. o. b. Baltimore, Maryland. The producers are to be paid for 90 percent of Class I and Class II allocations, respectively. Brokerage deductions and the butterfat differentials are the same as used for the month of December.

If there is any balance left in your hands due this association after such payments have been paid, you will, upon notice, promptly forward check to us. If, however, payments made in accordance with the above request will leave this association in your debt, we will, upon notice promptly forward check to cover same.

Very truly yours,

MARYLAND COOPERATIVE MILK PRODUCERS, INC.
——— ———, *Secretary.*

[53] The cooperative association and the distributors agreed on this plan. At first the agreement was written; now it is oral.

[54] A butterfat adjustment is made when milk received is over or under 4-percent butterfat.

[55] This price varies according to market conditions.

At the end of each month the distributor makes up a statement in duplicate for each producer showing, among other things, the daily production for the month, the average butterfat test, the adjusted price for each class of milk, and an itemized statement of deductions, such as for advances and brokerage or dues for the cooperative. One copy of the statement goes to the producer with the check and one copy is retained by the distributor. Thus the producer knows exactly how his monthly check was computed. The commission believes that other cooperatives would do well to adopt a form of statement as complete as that used by the Maryland Cooperative Milk Producers, Inc.

In addition to the statement for each producer, a summary statement is made up by each cooperative distributor, which lists the name of each of his producers with the class I, class II, and class III quantities paid for, with an additional column showing the association brokerage deductions.

A cooperating distributor only obligates himself to pay to the association 23 cents a gallon for milk sold as follows:

(*a*) Fluid milk sales, retail and wholesale.
(*b*) Fluid cream.
(*c*) Whole milk sold to ice cream manufacturers.
(*d*) Milk or cream used for chocolate milk, buttermilk, cottage cheese, and to cover plant loss.

Any quantity in excess of that needed for the foregoing purposes is considered surplus milk and is disposed of by the association as has been explained. In the plan in effect just after the termination of the Federal license, a surplus fund committee, made up of producers and distributors administered the finances involved in handling surplus milk. Under the present plan the association performs this function and makes all the adjustments out of the reserve fund of the association.

The processing distributor who pays the association producers more at the end of the month than what he owes the association for the 23-cent milk he has used, plus what he received from purchasers of any surplus milk he may have separated into 40-percent cream, will receive an adjustment from the association. Cooperating distributors whose authorized payments to producers amount to less than that which they owe for their purchases of 23-cent milk from the association pay the difference to the association.

Cooperating distributors who receive more milk from their producers than they can use for their own needs, may take the excess to one of the association's surplus processors.[56] They are paid 23 cents a gallon for such milk by the processing distributor. The adjustment for loss on this payment of 23 cents per gallon for milk used for surplus milk is then made between the processing distributor and the association.

The theory underlying the payment plan outlined above is that the sum of the class I and class II payments to producers will equal the receipts from distributors on fluid milk and cream sales paid for at 23 cents a gallon. For January 1936, for example, the producer was paid 24 cents per gallon of 4-percent milk, f. o. b. Baltimore, for class I, and for class II milk the price was 19 cents per gallon. Consequently, the above theory would only be true if the proportions of class I milk paid for at 24 cents and class II milk paid for at 19 cents were such as to result in a blended price of 23 cents. The only knowledge of distributors' sales the association had was the total of class I and II sales. Such a figure, however, gave the association no check on whether its class I and II basic allocations for its producers were in similar relationship to each other as distributors' class I and class II sales. That the basic allocations were not always in line with class I and II sales is shown by the fact that in 1935, the association paid producers about $71,000 (called loss on milk) out of its reserve fund for the purpose of making up the deficiency in receipts on milk sold. Although some of this may be ascribed to a loss on surplus milk, the remainder was paid out because more milk was paid for at class I and class II prices than was warranted by market demand. This statement is substantiated by an excerpt from the secretary's report given January 25, 1936, at the association's annual meeting, as follows:

> It was realized at the time that the full base could not be paid for, so the policy of paying the percent of allocations consumed was continued. This percent was established at 90 and has been continued ever since. However, due to a decided drop in sales of milk and cream to welfare agencies and an unusually large number of new producers making a base this relationship did not hold. Actually our present sales only warrant payment for approximately 85 percent of our base if we are to escape the tremendous losses charged to our reserve fund.

The association has followed the policy of keeping the price paid the producer as stable as possible in the interest of the producer. Even if market conditions would seem to warrant a higher price, the producer might be paid a somewhat lower price for his surplus milk and if market conditions warrant a low price, the price to the producer for his surplus milk is set somewhat higher. The theory behind this plan of handling settlements with producers is that the lowering of the surplus price tends to prevent producers from increasing production and thus creating a surplus which might become a burden and tend to disrupt the market.

SECTION 9. THE CINCINNATI MILKSHED

The Cincinnati sales area receives milk and cream from 29 counties in Ohio, Indiana, and Kentucky. About 50 percent comes from

[56] As previously stated practically all this processing is done by 1 company.

producers in Ohio, and approximately 25 percent from Indiana and Kentucky, respectively. Some producers are as far as 100 miles from the market, but the majority are within a radius of 50 miles from Cincinnati.

Milk accounts for about 20 percent of cash farm income in Ohio, Indiana, and Kentucky. Cash income of milk in these three States (not in the Cincinnati milkshed only) declined almost 50 percent from $168,765,000 in 1929 to $85,147,000 in 1932 and $84,718,000 in 1933, and rose to $98,879,000 in 1934,[57] which was 16.7 percent above 1933 and 16.1 percent above 1932 milk income. Cash farm income declined 55 percent, from $815,171,000 in 1929 to $365,305,000 in 1932, and rose to $417,109,000 in 1933 and $483,643,000 in 1934; 1934 farm income was 14.2 percent above 1933 and 32.4 percent above 1932. In 1934 both milk and farm cash income was about 40 percent below 1929. For the 6-year period, 1929–34, farm income was lowest in 1932 and milk income lowest in 1933; farm income declined faster than milk income.

The increase in milk income during 1934 may be attributed to increased milk prices. In Indiana and Kentucky prices increased more than income. In Ohio milk income increased slightly more than prices during 1934, partly because production was slightly larger than in 1933. During 1933 and 1934 farm income did not increase as fast as farm prices. Thus, income was larger than in 1932, even though production of farm products was less than in 1932.

Milk production in Ohio, Indiana, and Kentucky was estimated at 8,895 million pounds in 1929 and 8,796 million pounds in 1934, a decline of only 1.1 percent.[57] Milk production in Ohio and Indiana in 1931, 1932, and 1933 was actually larger than in 1929. Production per cow increased in 1931, when feed prices were low, and decreased in 1933 and 1934, when feed prices increased. The proportion of feed in a year derived from pastures is 40 percent in Ohio, 42 percent in Indiana, and 51 percent in Kentucky.

The milk is trucked to the pasteurizing plants, located either within the city limits or near the city. Country receiving stations were used until truck transportation became feasible. The hauling charges are about 35 cents per hundredweight for base milk and 17½ cents per hundredweight for surplus milk. While the haulers receive their pay from the distributors, the distributors deduct the hauling charges from the amount due the producers.

Prior to 1929, it is reported, distributors found profitable outlets for manufactured milk products and expanded their sources beyond their fluid milk and fluid cream requirements. The depression affected prices to such an extent that returns to producers were substantially reduced; yet they needed a market for their milk.

The Cincinnati sales area includes not only the city itself, but the suburban areas on both sides of the Ohio River. Distributors in Cincinnati have routes extending a considerable distance from the city. As appears elsewhere in this report, the Cincinnati Sales Association, Inc.,[58] and the milk distributors defined the "Cincinnati market sales area" as "All cities, towns, and suburban areas in Ham-

[57] Estimated by the Division of Crop and Livestock Estimates, Bureau of Agricultural Economics, United States Department of Agriculture.

[58] See sec. 13.

ilton and Butler Counties, except Middletown and Oxford, and the town of Milford in Clermont County."

The Cincinnati Sales Association, Inc., pooled sales of 32 distributors in December 1935. These distributors reported sales of 8,372,825 pounds of milk. Sales in December of 11 distributors who did not participate in the sales association pool were estimated at over 1,000,000 pounds, and those of French-Bauer, a subsidiary of the Cooperative Pure Milk Association, which also does not participate in the pool, at 4,350,000 pounds.

There are about 15 producer-distributors in Cincinnati. Most of them buy a considerable portion of the milk which they sell, and all pasteurize and bottle their milk. In addition there are estimated to be about 50 producers in this area with 6 cows or less each, who distribute milk. The total quantity of milk handled by all producer-distributors in the Cincinnati market is comparatively small, and their sales are reported to have no appreciable effect on the market-price structure.

There is also another small group of about five distributors in the Cincinnati market known as distributing brokers, who purchase processed and bottled milk from other distributors for resale. This group accounts for only about 1,700 pounds of milk per day.

Milk consumption in Cincinnati.—The only milk consumption figures available are those gathered by the Cincinnati Department of Health. They cover only the city of Cincinnati for the years 1930 and 1934, inclusive. Using a population figure of 460,000, the board of health estimated the daily per-capita consumption for 1934 to have been 0.75 of a pint, which was an increase of 0.06 of a pint over 1933.

Attempts to increase consumption of milk are sponsored by producers and distributors through the medium of the Ohio Valley Dairy Council. The council is following the National Dairy Council's eight-point educational program which includes the following fields: (1) Public health and medical department, (2) schools, (3) home economics, (4) home cooperation, (5) industrial groups, (6) social service and relief, (7) work with the dairy industry, and (8) dental program. It is claimed that the work has been successful, particularly in increasing the consumption of milk in the schools.

Twelve thousand dollars has been appropriated for a radio and newspaper advertising campaign in 1936 for the purpose of getting adults to use more milk. The products to be advertised in this campaign are milk, cream, and cottage cheese. Butter and ice cream are not stressed in this campaign because the manufacturers of those products do not contribute to the Ohio Valley Dairy Council.

The Ohio Valley Dairy Council has not conducted any milk-consumption studies in Cincinnati. In the opinion of the manager of the council an increase or decrease in the price of milk to the consumer does not make a great deal of difference in the consumption of milk. For example, he pointed out, in 1923 milk was selling at 14 cents per quart. Dealers would not take milk from the Cooperative Pure Milk Association, and the association was swamped with milk. It dropped the price of milk to 11 cents per quart, but was unable to sell any more at that price than at 14 cents. In 1933 the price of milk dropped from 14 cents to as low as 6 cents, but sales, it

is claimed, did not increase. It was admitted, however, that the changes in income were an important factor in consumption.

Cincinnati department of health.—The work of dairy inspection in Cincinnati and the producing area is in charge of the chief food inspector of the Cincinnati department of health. There are employed for this work, 1 supervisor, 1 sample collector, and 5 milk inspectors. Each of these 5 milk inspectors has about 2,000 producers to inspect yearly which enables them to average approximately one inspection per farm per year.

Each producer must have a permit in order to sell milk in the Cincinnati market. In order to get this permit certain sanitary requirements must be met. An inspection record is kept for each producer on which is recorded the inspector's scoring and any recommendations he may have made. The department, it is reported, does not hesitate to cut off any producer who does not meet the sanitary requirements. Producers have come to know this, so that little difficulty is experienced in obtaining compliance. The health department has to fight its own battles, because the cooperative associations and most of the distributors make little effort to do anything. According to informants, cooperatives are inactive in this regard, because they do not want to offend their members, and distributors are inactive because meeting sanitary requirements involves a money outlay for the producer and a consequent demand for higher returns on fluid milk. It is claimed that the United States standard ordinance for milk inspection is followed in practically every respect. The health department is bringing its producers up to this standard as rapidly as possible.

In addition to field work with the producers, the milk inspectors must inspect 55 pasteurizing plants. Twenty-six of these are outside the city limits but all are within a radius of 20 miles from Cincinnati. There are also 70 ice-cream plants and 15 butter-making plants under the health department's jurisdiction.

No raw milk is permitted to be sold in Cincinnati. This has been true for 7 years. The ice-cream ordinance requires that milk for ice-cream use must meet the same standards as for fluid-milk purposes. This differs from the practice in many communities where uninspected cream may be used for making ice cream. Cincinnati was one of the first cities, also, to condemn inferior cream intended for use in butter. This work is carried on in cooperation with the Food and Drug Administration of the United States Department of Agriculture.[59]

SECTION 10. THE COOPERATIVES IN THE CINCINNATI MILKSHED

Introduction.—The early history of milk distribution in Cincinnati is reported to have been one of conflict between producers and distributors. The milk producers of that area finally felt forced to

[59] An indication of the effectiveness of the sanitary inspection may be gained from the department of health record of baby deaths from gastroenteritis, a disease often caused by high bacteria content in milk. In 1911 there were 272 deaths from the disease or 72.3 per 100,000 population. In that year the average bacteria content of milk was 465,000 per cubic centimeter. In 1915, the year pasteurization in Cincinnati began, there were 175 deaths from gastroenteritis, or 44.3 per 100,000 population, the bacteria content being 290,000 per cubic centimeter in that year. In 1935, the bacteria count per cubic centimeter was 15,000 and only 65 deaths from gastroenteritis, or approximately 14 per 100,000 of population.

organize, because of the methods used by distributors in dealing with individual producers. In 1917 a rather loosely organized cooperative was formed known as the Queen City Milk Producers Association. The activities of this group improved conditions somewhat, but distributors continued to use many of the tactics concerning which there had been so much complaint. In 1921 the Tri-State Milk Producers Association was formed and it absorbed the Queen City Association.[60]

Distributor opposition to the cooperative idea appears to have continued and possibly in an intensified form. In any event, the producers finally concluded that the only way to assure themselves of an outlet for their milk was to engage in the business of distributing milk directly to consumers. With that end in view they obtained a milk plant in Covington, Ky. On January 1, 1924, it began also to operate the plants and distributing business of French-Bauer, the largest milk distributing company in Cincinnati, which it had agreed to buy.

The milk distributors of Cincinnati appear to have met this purchase of the largest distributing company in the city by the cooperative, by organizing another cooperative association whose membership consisted largely of producers who had not theretofore been shipping their milk to Cincinnati. This group was known as the K. I. O. Milk Producers Association.[61]

While it would seem that two cooperative associations would be sufficient to supply the requirements of the Cincinnati market, yet another association known as the Milk Producers Union was organized in 1933. It is reported that the producers organizing this association were largely drawn from the ranks of dissatisfied K. I. O. producers.[62]

The depression added to the demoralized conditions of the Cincinnati market which had been brought about by the severe competition between the distributors and the several cooperative groups. Fluid-milk consumption decreased and, of course, competition for the remaining business became increasingly more intense. Many producers were dropped by distributors, the quantity of surplus milk increased, thus lowering the net price to the producers, chain stores increased the differential between the store price and retail route price, thus taking business from the latter type of distributor, and, in the fight for a larger share of the market, price cutting increased both in severity and in frequency. Such was the condition of the Cincinnati market, it is said, when the Burk Act was passed in 1933 establishing the Ohio Milk Marketing Commission, which began operations in October 1933, in the Cincinnati sales area.

As a result of the Burk Act, conditions improved greatly, it is reported, and both producers and distributors were able to operate on a more satisfactory basis. Although this act expired after 2 years, and, of course, the Cincinnati agreement with it, the milk-marketing situation has since remained essentially the same as under the act. It is claimed that the present stabilized condition of the

[60] The Tri-State Milk Producers group in 1923 changed its name to the Cooperative Pure Milk Association.

[61] The initials stand for Kentucky, Indiana, and Ohio, the 3 States in which the members were located.

[62] In addition to the 3 cooperatives, there are between 1,600 and 1,800 so-called independent producers shipping into the Cincinnati market area.

Cincinnati area is an example of what can be accomplished by genuine effort between producers and distributors to solve their mutual difficulties. As is explained more in detail elsewhere in this report, while conditions doubtless were improved, certain practices are engaged in by the distributors in Cincinnati which could be changed with advantage to the producers.

As has been stated above, there are at present three cooperative groups marketing milk and milk products in the Cincinnati sales area. One is the Cooperative Pure Milk Association with its subsidiary distributing units. The second is the K. I. O. Milk Producers Association, the third the Milk Producers Union. In addition there is the group of independent producers who sell their milk through the Cincinnati Sales Association, which also acts as sales agent for the K. I. O. and the Milk Producers Union. Still another factor in the market is the group of distributors who buy from independent producers on a flat-price basis. Milk came into Cincinnati from the various producer groups in 1935 in the following approximate proportions:

	Percent
The Cooperative Pure Milk Association	32
Milk Producers Union	24
K. I. O. Milk Producers Association	20
Independent producers [1]	24

[1] Includes producers selling through the Cincinnati Sales Association, Inc., and producers dealing directly with distributors.

The Cooperative Pure Milk Association.—The Cooperative Pure Milk Association is not only the largest cooperative in the Cincinnati area, but it is also one of the few large associations in the country that carries through the process of milk distribution from producer to consumer. It, in fact, operates the largest milk distributing business in Cincinnati. Its history is, therefore, of unusual interest.

By 1915 relations between milk producers and distributors in the Cincinnati sales area, as previously stated, were becoming strained. The unorganized producers were powerless as individuals in bargaining with distributors. When a producer claimed he was being short weighed, or that his butterfat test was not correct, he was told to keep his milk at home. Furthermore, he was told that he was the only producer who was complaining. Eventually, however, producers began comparing notes, and it was found that many claimed both short weighing and incorrect butterfat testing. In addition, producers also sought higher prices for their milk. Such conditions presented fertile ground for cooperative effort.

Meetings of producers in the Cincinnati producing area were held and resulted in organizing the Queen City Milk Producers Association in 1917. This was a bargaining association; it was not incorporated; it had no contract, and it had no systematic way of collecting funds. The association did not control a large volume of milk and having no facilities for taking care of its producers' milk if they had refused the distributors' terms, the association shippers had no alternative but to accept whatever was offered.

As previously stated, the Tri-State Milk Producers Association, formed in 1921, absorbed the Queen City Association and increased the area in which the latter had operated by taking in producers in

counties of southwestern Ohio, southeastern Indiana, and northern Kentucky. This organization was the forerunner of the present Cooperative Pure Milk Association.

Even before the association changed its name to the Cooperative Pure Milk Association, it had opened a plant in Covington, Ky., to distribute milk. This action was taken, it was reported to the Commission, because Covington distributors had refused to deal with the organized producers.

As the result of a friendly suit brought by the Tri-State Butter Co., the association reincorporated September 10, 1923, under the name of the Cooperative Pure Milk Association. Another reason for reincorporating was to take advantage of the cooperative law that had been passed in Ohio.

The same producer contract was in use from September 10, 1923, to January 1, 1934. It called for payment by the signer of $20 for each cow owned and controlled by him. Each producer member signed a note for the amount due the association, with 6-percent interest due, if it was not paid at maturity. In return the producer was given a certificate of indebtedness for an amount equal to the face of the note. Each producer also agreed to pay a $3 membership fee. After 1927 the note feature was dropped as deductions were made from each producer anyway and the use of notes merely made additional bookkeeping.

Throughout its early history the association was vigorously opposed by the milk distributors through the latter's organization, the milk exchange of the chamber of commerce. So bitter became the antagonism of the milk exchange to the Cooperative Pure Milk Association that the latter won a judgment against the former for libel.

By 1924 the Cooperative Pure Milk Association had obtained control of about 85 percent of the milk in the Cincinnati producing area. So many distributors began to refuse to buy from the association, however, that the supply could not be sold. The association thereupon served notice on the Cincinnati distributors that, if they would not take the association's milk, the association would put the milk on the market at whatever price might be necessary in order to dispose of it.

As the association controlled so large a part of the milk supply in the immediate producing area around Cincinnati, it could thus have forced the distributors to bargain, if it had not been for the K. I. O. Milk Producers Association and the Cincinnati Board of Health. The K. I. O. producers' organization was apparently sponsored by the milk exchange in what is reported to have been a part of an attempt to break the Cooperative Pure Milk Association. The health department is alleged to have cooperated with the milk exchange by permitting cream producers (mainly from the territory outside the area from which the Cincinnati milk supply came) to ship milk into the city. These outside cream producers apparently formed the nucleus of the K. I. O. organization.

As a result of the foregoing, the Cooperative Pure Milk Association continued to experience great difficulty in disposing of its producers' milk, even though some distributors took most of their milk from the association. The four processing and manufacturing plants and 33 milk routes which had been acquired by the association could not take care of all the milk produced by the association producers.

Under these circumstances the association may have felt that permanent control of some distributing company was necessary to furnish an outlet for the milk of its members. Such was the condition of affairs about the middle of 1923 when the financial control of the French Bros.-Bauer Co.,[63] the largest milk-distributing company in Cincinnati, changed hands. This company, distributing at the time about 50 percent of the fluid milk and 75 percent of the ice cream, had been much opposed to the activities of the Cooperative Pure Milk Association. Under the new management the company changed its attitude and agreed to purchase its milk through the association. For this action, it is said, the French Bros.-Bauer Co. lost its membership in the milk exchange.

Following this came an offer from the French Bros.-Bauer interests to sell the company to the Cooperative Pure Milk Assocation. After careful consideration the assocation accepted the offer and took over active control on January 1, 1924.[64] The vigorous opposition from Cincinnati milk distributors to this purchase was also apparently an important factor in arriving at the decision to purchase the French Bros.-Bauer Co. In fact, if milk distributors in Cincinnati and vicinity had made any efforts to come to terms with the association, it is quite probable, according to statements made to the Commission's examiners, that it would have remained purely a bargaining type of organization.

In 1930, all of the common stock of French-Bauer, Inc., was acquired by the association by means of a loan from the Federal Farm Board of $1,900,000 and by issuing $497,000 of special preferred certificates of indebtedness bearing 7-percent interest. In addition to the above obligations, the association had issued membership certificates of indebtedness over the period of years since its inception to a total amount of approximately $1,500,000.

---

[63] The name of the company was changed to French-Bauer, Inc., after it was purchased by the cooperative.

[64] The details of the purchase and early financing of the transaction were as follows:

"This company then offered to sell its business to the cooperative association. The association agreed to buy it at the appraised value, which was approximately $3,600,000. This included nothing for goodwill. Out of the 120,000 shares of stock outstanding, 100,000 shares were placed on deposit under a trust agreement, and the cooperative agreed, on November 30, 1923, to purchase this stock over a 5-year period with the option of a 3-year extension. The contract became effective January 1, 1924.

"Under the original agreement the minimum payment was to be $150,000 per year; in addition dividends on stock were to be maintained, and 4 percent of the valuation of the assets or $144,000 was to be set aside annually in a fund to be used for expansion.

* * * * * * * * * *

"The management of the company was retained and the business carried on as before. The milk exchange had refused to negotiate with the company as soon as it had been purchased by the cooperative, and the distributors started a costly milk war, expensive to them and to the cooperative. At the end of the first year, the cooperative was unable to meet its entire contract. The interests that had sold the stock were sympathetic and wanted to complete their sale. They agreed to allow the cooperative association to defer the dividends due, and many of the stockholders generously assigned any claim they might have to these dividends to the cooperatives. In 1925, they allowed a modification of the contract so that only 7 percent dividends were to be paid on the common stock and 6 percent on the preferred. The expansion provision of the contract for $144,000 per year, after having been carried out for one year, was discontinued until such time as the cooperative was in a position to continue it. The company sold its grocery stores, bakery, and some other properties and used the proceeds, together with its surplus, for expansion.

"The 5-year period from the date the original contract became effective, ended January 1, 1929. At the end of 1927 the association had paid $8 per share on the purchase price of $22. The original agreement provided that one-half of the stock should be paid for at the end of five years, and that the entire debt should be paid in eight years. To meet this agreement would have required a payment of $3 per share in 1928, which could have been met by increasing deductions or by outside loans. The same would be true of the $11 per share for the next three years. On December 20, 1928, however, the contract with the stockholders was further modified. This agreement provided that no payments would be made in 1928, 1929, or 1930; for the years 1931 up to and including 1937, a minimum payment of $1 per share must be made; and by the end of 1938 full payment for the stock must be completed. This effects a 7-year extension of the original contract." (Technical Bulletin No. 179, U. S. Department of Agriculture, May 1930, pp. 80 and 81.)

The membership certificates of indebtedness were used as a means of building up the capital structure of the association and were issued in denominations of $20 and in multiples of $20 up to and including $100.[65] The method of obtaining money from members for these certificates was by deductions made on each hundredweight of milk delivered by members. At first the deductions were as much as 25 cents per hundredweight. At present the deduction is 15 cents per hundredweight on the allotted base. At the end of the fiscal period the amount accumulated by a producer was returned in the form of a certificate of indebtedness.[66]

By 1933 the association found that it was getting more deeply into debt by making the payments of 6-percent interest and principal payments on the certificates of indebtedness and the policy was discontinued. Another factor influencing the decision was that an additional loan to the association from the Farm Credit Administration was contingent on whether the members holding certificates of indebtedness would exchange them for noncumulative preferred stock.

After 84 percent of the holders of outstanding certificates had agreed to the exchange, a refinancing plan was approved by the United States district court on December 17, 1934. Early in 1936 there was approximately $1,400,000 of the noncumulative preferred stock issued. About $125,000 of the certificates of indebtedness is yet outstanding. It was expected that transfers would be completed by March 1936.

A new contract was adopted January 1, 1934, which among other things provided for the issuance to the producer of noncumulative preferred stock in place of certificates of indebtedness in return for the amount deducted on each hundredweight of allotted base.

No dividend has been paid as yet on the noncumulative preferred stock. The stock may be owned by anyone. The amount of the noncumulative preferred stock is being increased monthly by the amount of deductions made. In this connection it should be stated that the association pays about $9,000 monthly to the Government and is reducing its obligation to that extent.

Another stipulation of the Farm Credit Administration, before it would make an additional loan to the association, was that the holders of the 7-percent special preferred certificates of indebtedness issued to the parties who sold the company to the association should exchange them for preferred stock. The association offered the holders of these 7-percent special preferred certificates of indebtedness the choice of either exchanging their certificates, dollar for dollar for 6-percent preferred stock of the association subsidiary, French-Bauer, Inc., or they could cash their certificates of indebtedness at 50 cents on the dollar. Approximately $152,300 of the 6-percent French-Bauer preferred stock is now outstanding. The company has the right to redeem this preferred stock at face value at any time.

Recently the association has issued common stock with a value of $3 per share. Old members who paid $3 for membership are given a share of the stock, and new members pay $3 for one share of the common stock which is the equivalent of a membership fee. Each holder of a share of stock is entitled to one vote. The stock must be voted in person. This provision is to eliminate politics and the usual scramble for proxies. It also forces the members to attend the association meetings, if they wish to vote for officers or on the policies of the association.

The Cooperative Pure Milk Association is in reality a holding company, for it owns all of the common stock of French-Bauer, Inc., the Ritz American Ice Cream Co., both located in Cincinnati, and of Kentucky Dairies, Inc., of Louisville, Ky. The association has 15 directors, or one from each of the districts comprising the producing area in which the members live. These directors nominate the directors for the subsidiary companies. As all voting stock in these subsidiaries is owned by the association, their nominees become the directors of the subsidiary companies.

The following tabulation shows the quantity of milk delivered by the association producers during the years 1925–35:

Year:	*Pounds*	Year:	*Pounds*
1925	97,995,121	1931	87,092,851
1926	88,042,621	1932	80,064,487
1927	86,273,094	1933	63,964,765
1928	75,713,389	1934	59,630,546
1929	75,700,497	1935	59,897,467
1930	89,044,080		

This is indicative of a downward trend in membership. In 1924 there were approximately 3,300 members in the Cooperative Pure Milk Association. There were about 1,900 members in 1935, of which number the active shippers to French-Bauer, Inc., the largest of the association's subsidiaries, ranged from 1,509 to 1,575.

The K. I. O. Milk Producers Association.[67]—The Second oldest cooperative in Cincinnati is the K. I. O. Milk Producers Association, which was incorporated in 1924 as a nonprofit organization and on August 31, 1935, was reincorporated under the cooperative sections of the General Code of Ohio.

In December 1932 the membership of the K. I. O. Milk Producers Association was 2,028. In November 1933 it was reduced to 843, due to the encroachment of a new producer association, which is subsequently described, and the necessity of having members of record.[68] However, by November 1934 its membership had increased to 1,058.

The association, since October 1, 1933, has made a check-off of 3 cents per hundred pounds of milk from members. From June 1924 to January 1929 the check-off was 2 cents per hundredweight, and from January 1929 to October 1, 1933, it was 4 cents per hundred-

[65] The following provision found in the first producer contract used by the association provides for the certificates of indebtedness:

"The association shall also make further deductions to create a special fund to retire loans, to be used in building warehouses or other necessary buildings, to purchase land and buildings, to secure necessary equipment, to provide such working capital as said association may deem necessary, said deductions for the special fund to continue as long as the producer delivers milk or milk products to the association for sale. After the close of each fiscal year, each producer shall receive a certificate of indebtedness in the amount of the deductions thus made to create the special fund."

[66] Each membership certificate of indebtedness had attached to it 10 coupons. The first 5 entitled the owner to 6 percent interest per annum on the face of the certificate. On the remaining coupons was the provision that one-fifth the face of the certificate should be paid yearly, plus interest at 6 percent. The payment of the tenth coupon at the end of 10 years canceled the certificate of indebtedness.

[67] According to its articles of incorporation, K. I. O. Milk Producers Association is the corporate name, and the letters stand for Kentucky, Indiana, and Ohio, the States in which the members are located.

[68] The Ohio Milk Marketing Commission Act became effective in the Cincinnati market October 1, 1933, and one of the commission requirements in this market was that all association members be of record.

weight, 1 cent of which was for the Ohio Valley Dairy Council. Prior to 1933, distributors dealing with K. I. O. remitted a check-off to the association on all the milk they purchased. Thus all producers who shipped to distributors were considered members of the K. I. O. Milk Producers Association, except the members of the Cooperative Pure Milk Association and about 100 producers who shipped to about 20 small dealers who did not cooperate with K. I. O.

It appears that while some butterfat testing was done by K. I. O. Milk Producers Association inspectors prior to 1929, no real attempt was made to test milk of all members at the distributors' plants until January 1929, when the association check-off was increased, as above indicated.

The association has no record of the quantity of milk produced by its members prior to October 1, 1933, when the Ohio Milk Marketing Act became effective in the Cincinnati market. However, the distributors working with the association deducted from the amount due their producers, for milk purchased, a specified amount per hundredweight, designated as the association check-off, which they remitted to the association. The records of the association show the amount of these remittances and the amount of the check-off per hundredweight for different periods.[69] The following tabulation, which shows the amount of the deductions from the producers, the rate of the check-off per hundredweight, and the approximate quantity of milk represented by the producers' check-off, has been prepared from data in the files of the K. I. O. Milk Producers Association:

Year	Deduction for association	Check-off per hundredweight	Approximate pounds of milk shipped
1925	$14,907.82	$0.02	74,539,100
1926	15,866.11	.02	79,330,550
1927	15,912.17	.02	79,560,850
1928	15,118.67	.02	75,593,350
1929	24,155.51	.04	60,388,775
1930	28,841.87	.04	72,104,675
1931	27,152.39	.04	67,880,975
1932	25,298.89	.04	63,247,225
1933	19,269.55	(1)	51,281,650
1934	13,778.83	.03	44,948,700
1935	13,601.73	.03	45,339,100

[1] 4 cents to Oct. 1, 1933, and 3 cents thereafter.

The above tabulation indicates that the approximate quantity of milk delivered by association members during the years 1925–32 ranged from 60 million to nearly 80 million pounds per year. Beginning with the year 1933, there was a drastic decline in shipments, which occurred at the time of the decline in membership in that year.

The association had a contract with some of the distributors which was entered into in 1933.[70] Most of these distributor contracts were executed by August 1933. This agreement between the association and the distributors was not in effect for any length of time, as only one or two distributors had signed it prior to August 1933, and the

[69] As the distributors did not report quantities of milk delivered by K. I. O. members, the latter could not be certain that the amount of the check-off was correctly calculated.
[70] Prior to this year the K. I. O. did not have contracts with distributors.

Ohio Milk Marketing Act became effective in Cincinnati on October 1, 1933. When the act terminated July 1, 1935, the K. I. O. became one of the organizers of the Cincinnati Sales Association, Inc., which became the sales agent for the K. I. O. and the Milk Producers Union, another group of producers, and also for a group of producers who do not have any organization and are known as independents.

Subsequently in this report some of the activities of the K. I. O. organization are commented upon.

The Milk Producers Union, Inc.—The Milk Producers Union, Inc., was incorporated in 1933, and received its charter about May of that year. By March 1933, six or seven hundred producers had petitioned for membership. In February 1936, the association had about 1,600 members. Many of the original members of the union had been members of the K. I. O., if deduction of a check-off paid to K. I. O. constituted membership. When the K. I. O., in accordance with the regulations of the Ohio Milk Marketing Commission, attempted to sign up these producers, a substantial number refused to do so. It is from this group that the union obtained many of its members.

Originally each member of the union paid a fee of $1 in addition to the dues, or check-off, of 3 cents per hundredweight. However, the $1 membership fee is no longer collected, and the only fee, or check-off, is 3 cents per hundredweight. Butterfat tests are made by inspectors of the Milk Producers Union, Inc., for its members. The records of the Cincinnati Sales Association show that producers of the Milk Producers Union shipped 3,269,201 pounds of milk during the month of December 1935.

The union appears to have had considerable difficulty with the distributors to which its members had formerly shipped when they were members of the K. I. O. Apparently some of these distributors dropped these producers when they ceased to be members of K. I. O., and, according to officials of the union, requested permission from the Board of Health of Cincinnati to bring in milk from new shippers. This request, however, was refused, whereupon the distributors "reinstated" these dropped shippers. In the meantime, however, the union, in order to protect its dropped shippers, had purchased a milk plant and had begun to process the milk of its members. When the distributors reinstated the dropped producers the union sold its milk plant, this being only a few months after its purchase.

Early in 1933, when the Milk Producers Union was first organized, it attempted to operate by using the producer bases which had been established by the distributors cooperating with K. I. O. Due to the inability of the union to market its milk due to the dropping of producers by distributors, bases were disregarded during the months of April, May, June, and July 1933, and the milk was pooled and sold to the best possible advantage, the receipts being prorated on a basis of the total quantity of milk shipped by each member. As soon as distributors resumed buying milk from members of the union bases were set up on the average of production of the 3 months of October, November, and December 1932 and were maintained until October 1, 1933, when the Ohio Milk Marketing Act became effective in the Cincinnati area.

SECTION 11. OTHER MARKETING AGENCIES IN CINCINNATI—INDEPENDENT PRODUCERS

In addition to the producers who are members of the above-described cooperative associations, the independent producers in the Cincinnati shed produce approximately 24 percent of the milk in that area.[71] In December 1935 these independent producers shipped over 3,000,000 pounds of milk into the sales area as compared with 3,269,201 pounds by members of the Milk Producers Union and 2,762,065 pounds by members of the K. I. O. Milk Producers Association.

Two distributors, the Frechtling Dairy Co., a subsidiary of the National Dairy Products Corporation, and the Kroger Grocery & Baking Co. took considerably more than half of the milk shipped by these independent producers, their combined purchases from independent producers during December 1935 amounting to 1,311,482 pounds.

The Kroger Grocery & Baking Co.—One of the larger distributors of milk in Cincinnati is the Kroger Grocery & Baking Co., a chain of retail grocery and meat stores. This company began distributing milk through its stores in Cincinnati about 50 years ago. In 1926 the company began operating its own milk-pasteurizing and bottling plant. The records of the Cincinnati Sales Association show that in December 1935 the Kroger Grocery & Baking Co. purchased over 785,000 pounds of milk from producers cooperating with the sales association, most of which was from the independent producers who sold their milk through the sales association. This was nearly 6 percent of the estimated total quantity of milk handled in the Cincinnati sales area in that month.

The Kroger Co. now sells milk in its stores at a 1 cent per quart differential under the wagon price. Prior to the passage of the Ohio Milk Marketing Act, however, it sold milk at from 1 to 2 cents per quart less than the retail wagon price and when the price of milk delivered to homes was reduced to 12 cents per quart on February 1, 1932, the chain-store price was reduced to 10 cents per quart. Due to the steadily declining economic trend and to the publicity given milk prices, it is said that this 2-cent differential was sufficiently important to increase the store sales of the Kroger Co. approximately 25 percent. When the delivered price was reduced to 10 cents per quart on March 16, 1932, the chain stores decreased their price accordingly, maintaining the 2 cents per quart differential.

The Ohio Milk Marketing Commission in its order effective October 1, 1933, pertaining to the Cincinnati market, fixed delivery, cash-and-carry store, and wholesale prices, and the differential between the retail wagon-delivery price and the chain-store differential was set at 1 cent per quart. This differential was continued during the tenure of the commission and was immediately reestablished under the Cincinnati Sales Association agreement with distributors, which is still in effect.

The Kroger Co., as a distributor with plant equipment, and as an operator of a chain of stores with retail facilities, is said to be in a favorable position in the field of marketing milk. It buys directly from producers through the Cincinnati Sales Association, processes the milk in its own plant, and retails to the consumers over its own store counters. Thus there are no intermediaries and, consequently, no division of the spread between the cost at the plant and the price received from the consumer. This company is considered by the distributors to be a potential menace because it is believed to be in a position to cut prices drastically or, as was stated by one informant "could pay more for milk or sell for less and create a great disturbance in the market."

[71] The 24 percent includes the sales of milk of independent producers shipping through the Cincinnati Sales Association and of independent producers dealing directly with distributors.

SECTION 12. THE OHIO MILK MARKETING COMMISSION

In June 1933 an act was passed by the General Assembly of the State of Ohio regulating the distribution of milk or cream and creating a milk-marketing commission. This act, commonly known as the Burk Act, was passed as emergency legislation, and was in effect from the date of approval, June 22, 1933, to July 1, 1935, the date specified for its expiration, unless extended.[72]

In section 2 of the Burk Act reference is made to the sales of milk as a business charged with public interest for the reason that milk is a necessary article of human food, and the maintenance of an adequate supply of milk of proper chemical and physical content is vital to the public health. Section 3 of the act provided for appointment by the Governor of four commissioners to constitute the Ohio Milk Marketing Commission created by the act. The members of the commission were appointed on July 16, 1933.

An order establishing rules and regulations for the conduct of the milk business in the Cincinnati sales area was issued by the commission, to be effective October 1, 1933. Section 4, exhibit A, of this order, provided as follows:

> The producers and milk dealers shall use their best efforts to assure the observance of the terms and conditions of this order, the Act, and the rules and regulations of the Commission. Subject to rules and regulations satisfactory to the Commission, the Control Commission shall be selected to consist of eight members, one member to be selected by each of the three Producers' Associations, one member to be selected by the three members so selected, which member shall not be a member of either of the Producers' Associations, and four members to be selected by the distributors.

It was the duty of the local control commission to investigate properly presented charges relative to violations of the Ohio Milk Marketing Act or violations of the orders of the commission. If, in the opinion of the control committee, the charges were true, the person violating the rules was to be notified to comply, and if he continued in such violation, the commission should be notified.

The control committee was responsible for the accuracy of all weights and butterfat tests and for the correctness of all statements with reference to the utilization and classification of milk sold by the distributors.

For the purpose of setting up a plan for settling with producers shipping to Cincinnati, the commission, in its official order no. 156 effective for June 1934 only, provided that the Cincinnati sales area be comprised of two groups. Group A was to consist of French-

[72] The act was not extended, although an attempt was made in the Ninety-first General Assembly to reenact the law. Two bills were introduced, but both were defeated.

Bauer, Inc., a distributor, and the Cooperative Pure Milk Association,[73] representing the producers; and group B, included all other distributors operating in the pool and the producers delivering to group B distributors. This order further provided—

> That the group having the lesser proportion of base deliveries in relation to Class I and Class II sales shall be privileged to increase the bases of the producers of such group proportionately by a uniform horizontal increase subject to such other adjustments as may be approved by the Base Adjustment Committee hereinafter referred to, such adjustment not to exceed the ratio established for the other group.

Order no. 174, effective July 1934, provided that these two groups be continued after June 1934 for the purpose of setting bases according to the proportion of class I and II sales of each group to the total class I and II sales.

Under the order effective October 1, 1933—

> The price to the producer for base milk per cwt. of 3.7 percent butterfat shall be determined by totaling the values of the quantities sold as class I, class II, and the quantity within the base of class III, at the following prices[74] f. o. b. distributor's platform: Class I milk, $1.95; class II milk, $1.45; class III milk to be determined currently by the Control Committee.

The control committee was authorized to dispose of class III milk to the best advantage, but the price per hundredweight was not to be less than 3.7 times the average price of 92-score Chicago butter for the month.

The prices of class I and class II milk were subject to a butterfat differential of 3 cents for each 0.1 percent above or below 3.7 percent when the Chicago 92-score butter price was below 30 cents per pound, and the differential was to be 4 cents when such butter price was 30 cents or over per pound.

Effective August 1, 1934, the price schedule was amended by increasing the prices of classes I and II and adding a class I–A covering milk to be sold to recognized relief agencies. The amended schedule also provided that—

> The price to the producer for base milk per hundredweight of 3.7% butterfat shall be determined by totaling the values of the quantities sold as Class I, Class I–A and Class II, and the quantity within the base of Class III, at the following prices, f. o. b. distributor's platform: Class I milk, $2.35; Class I–A milk, $1.80; Class II milk, $1.65; Class III to be determined currently by the Control Committee.

A schedule of distributor resale prices was also established by the order effective October 1, 1933. These prices were under three separate headings, as follows:

> Retail prices and grocery charges and or delivery sales prices.
> Grocery resale price for cash-and-carry-sales.
> Wholesale prices.

Originally the resale price schedule included the entire Cincinnati sales area. However, on October 25, 1933, the order was amended and a different price schedule was prepared for Middletown and suburbs and all rural districts and towns in the Cincinnati sales area in which distributors of metropolitan Cincinnati did not distribute

[73] The Cooperative Pure Milk Association owns the French-Bauer Co.

[74] The original order of the commission fixed the class I price at $1.90 per hundredweight and the class II price at $1.40 per hundredweight, but before the month was out, owing to dispute, these prices were changed. Consequently, the original prices were never applied to milk settlements.

and sell in excess of 60 percent of the normal milk consumption. These retail prices, generally, were 1 cent per quart less and the wholesale prices one-half cent per quart less than the Cincinnati prices. Furthermore, no store differential was provided for cash-and-carry stores in these outlying communities.

On August 1, 1934, the date when the price of class I milk to the producers was increased from $1.95 to $2.35 per hundredweight, distributor resale prices were increased as follows:

> That in exhibit 5 thereof, there be an increase of 1 cent per quart on "Milk Standardized", "Special Milk, Standardized", and "Milk, Whole" under each of the schedules, namely, "Retail and Grocery Charge and/or Delivery", "Grocery Cash and Carry", and "Wholesale"; an increase of 1 cent per pint on such milk under the schedule "Retail and Grocery Charge and/or Delivery" only; and 3 cents per gallon on such milk in bulk under "Wholesale" only.

Thus, the price of class I milk to the producer was increased 40 cents per hundredweight and the price to the consumer was increased approximately 46 cents per hundredweight.

Under the Burk Act the producers' deductions or check-offs were not to exceed 5 cents per hundredweight on base milk and not to exceed 4 cents per hundredweight on surplus. That part of the order pertaining to these deductions reads as follows:

> From money due the producers for milk purchased according to such schedule of prices, the distributor shall deduct and pay for each one hundred pounds of base milk, or all milk so purchased, as follows:
> To the Control Committee, one cent per cwt. on all milk, except that the Control Committee may reduce this rate per cwt.
> To the dairy council one cent per cwt. on base milk.
> To the Producers' Association of which the producer is a member, three cents per cwt. on all milk, provided, however, if said producer is not a member of either of the Producers Associations, then said sum of three cents per cwt. on all milk so deducted shall be paid over to the Control Committee. The sum so paid shall be kept as a separate fund by the Control Committee for the purpose of securing to such producers not members of a Producers' Association, benefits similar to those which are secured by members of the same by virtue of their like payments to such Producers' Associations.

The distributors were instructed to deduct these amounts from payments due the producers for milk purchased and to pay same as above indicated.

The order establishing rules and regulations in the Cincinnati sales area also contained rules of fair trade practices which afterward were incorporated in the agreement between the Cincinnati Sales Association and milk distributors, and are presented in the discussion of the sales association.

SECTION 13. CINCINNATI SALES ASSOCIATION, INC.

Upon the termination of the Ohio Milk Marketing Commission Act, the K. I. O. Milk Producers Association and the Milk Producers Union entered into an agreement dated July 1, 1935, to organize an association to be known as the Cincinnati Sales Association, which was incorporated under the cooperative sections of the General Code of the State of Ohio on September 10, 1935.

The association sells the milk of not only the K. I. O. Milk Producers Association, the Milk Producers Union, but also a number of independent producers. In December 1935 these three groups

represented 2,883 producers who sold their milk through the Cincinnati Sales Association.

A comprehensive contract was executed by the Cincinnati Sales Association and cooperating distributors as of July 1, 1935. A copy of this contract is attached hereto as appendix C.

This contract defines the several classes of milk and sets the prices to be paid producers for each class. Conditions governing the reports of distributors to the pooling committee are prescribed and the right of auditors of this committee to have access to the "Books and records of the Distributors pertaining to the matters upon which reports of said Distributors were made, to verify the accuracy of said reports."

Another provision of this agreement is that the distributors "agree to observe and abide by the schedule of minimum prices for the retail and wholesale selling of milk as are set forth in Schedule A." Distributors also agree to observe the quantity discounts on wholesale sales as set forth in schedule B and also agree to observe "the rules of fair practice set forth in Schedule C." These fair-trade practices, 32 in number, prescribe numerous things which subscribers to the agreement are to refrain from doing.

According to the definition of the Cincinnati market sales area in which the agreement between the sales association and the milk distributors was to be operative, the agreement is so worded as to appear to cover only intrastate transactions as the entire market sales area is located within the State of Ohio.

The agreement between the Cincinnati Sales Association and the milk distributors just referred to is subject to considerable criticism. No attempt will be made to discuss the several provisions of the schedule governing fair-trade practices or the resale prices provided for in schedule A of the agreement. Instead the criticism will be directed to those provisions governing payments to producers.

According to the sales agreement the price to be paid producers for class I milk of 4 percent butterfat was to be $2.40 per 100 pounds f. o. b. distributors' platform. This price of $2.40 is 5 cents per 100 pounds more than the price set by the Ohio Milk Marketing Commission and it was effective July 1, 1935. This difference of 5 cents per 100 pounds, however, is not an increase in the price to producers, as the $2.35 per 100 pounds set by the Milk Commission was for milk of 3.7 percent butterfat, while the $2.40 price of the Sales Association agreement was for milk of 4-percent butterfat. Both the order of the Milk Commission and the agreement of the Sales Association prescribed the same butterfat differentials, namely, 3 cents for each one-tenth of 1 percent butterfat above or below the basic content whenever the price for Chicago 92-score butterfat is below 30 cents per pound and the differential was 4 cents for each one-tenth of 1 percent whenever Chicago 92-score butter was 30 cents a pound or more. Consequently, no matter what the price of 92-score butter at Chicago may be, producers receive less for their class I milk under the Sales Association agreement than they did under the order of the Milk Commission. If the price of 92-score butter at Chicago was less than 30 cents, the per 100-pound price to producers under the Milk Commission would be $2.44 per 100 pounds for 4-percent-butterfat milk, and when the price of Chicago butter was 30 cents or more, the price to producers would be $2.47 per 100 pounds for 4-percent milk, as compared to the $2.40 price under the Sales Association agreement.

The differences in respect to class I milk, however, were not as great as those for class IA and class II milk. The Cincinnati Sales Association agreement did not increase the prices to producers for these two classes of milk, as they remained at $1.80 and $1.65 per 100 pounds respectively, but the agreement made the butterfat base for these two classes of milk 4 percent, whereas under the order of the Milk Commission the base was only 3.7 percent.

The amount by which returns to producers under the Sales Association plan were below the returns which would have been made at the prices of the Ohio Milk Commission was $25,367.46 for the last 6 months of 1935. This sum represents 2.74 percent of the amount the distributors[75] involved in the calculation would have paid producers under the Ohio Milk Commission schedule of prices.

Under the agreement between the Cincinnati Sales Association and the distributors, the latter have continued to convert class I, class IA, and class II sales to the butterfat test of milk purchased. As the average butterfat test of milk purchased during the first 6 months of the Cincinnati Sales Association, Inc. (last 6 months of the year 1935), was in excess of the butterfat base of milk prices (4 percent) for that period, substantial quantities of butterfat paid for at butterfat differential prices which are less than the prices of butterfat provided for in the respective class prices, were sold as class I, class IA, and class II. (See ch. III, sec. 2.)

If class I, class IA, and class II sales had been converted to 4-percent butterfat, no butterfat paid for at butterfat differential prices would have been sold in the respective classes, assuming sales were properly calculated. The following provisions of the agreement appear to provide for the conversion of such sales to 4-percent butterfat:

> Class I milk shall be that sold for bottled and bulk milk, both plain and flavored, for fluid consumption, standardized on a basis of 4.0% butterfat.
>
> Class IA milk shall be that sold to recognized relief agencies approved by the Pooling Committee of the Cincinnati Sales Association or on orders signed by representatives of the recognized relief agencies so approved for bottled and bulk milk, both plain and flavored for fluid consumption, standardized on a basis of 4.0% butterfat.
>
> Class II milk shall be that sold for bottled and bulk cream, bottled and bulk buttermilk, and cottage cheese for fluid consumption. standardized on a basis of 4.0% butterfat.
>
> Class III milk shall be the remainder of the milk not sold as Class I, Class IA, or Class II within the basic quantity and the quantity received in excess of base.

If the purpose of the above provisions was to convert class I, class IA. and class II sales to 4-percent butterfat, the distributors have violated the agreement.

Thus, the Cincinnati Sales Association appears to be attempting to perpetuate some of the practices inimical to the interests of the producers which have existed in that milkshed for many years.

By December 31, 1935, 29 distributors had entered into contracts with the assocation and 3 other distributors were cooperating or participating in the pool but had not signed the contract.

[75] The distributors include all working with the Sales Association during the period.

The association acts as a clearing house between the producers and distributors. It bills the distributors for all milk purchased on a basis of utilization of the milk as reported to it by the distributors, and pays the producers a blended price for base milk and a surplus price for all excess over base, as is discussed later in this report.

A major function of the association is to assist distributors in maintaining their milk requirements. When a distributor's supply is inadequate to meet his requirements he calls on the association for an additional supply, whereupon the association procures the milk from another distributor or distributors who may have an excess over his or their needs. The distributor supplying the desired milk receives the class I price, plus an estimated plant expense of approximately 3 cents per gallon. In case unusual conditions should occur causing a shortage in the milk supply, the association is expected to obtain milk from outside the Cincinnati shed for cooperating distributors.

SECTION 14. MILK SETTLEMENT PLANS IN THE CINCINNATI MARKET

Selling milk on a base and surplus plan has been a more recent development in the Cincinnati market than in some of the other markets covered by this report. Until May 1925 producers shipping to Cincinnati appear to have been paid on a flat-price basis.

Cooperative Pure Milk Association.—From 1925 to 1931 the methods used by the Cooperative Pure Milk Association in settling with its producers appear to have fluctuated from a flat-price basis to a form of the utilization plan and then back to a flat-price basis. Unfortunately an exact account of the methods used by this association in this period was not available. It was reported, however, that ordinarily the individual members of the association did not have assigned bases. From time to time a type of base was used which provided for paying a premium of 10 cents a hundredweight of milk to those producers who increased their production during a period of low production over what it had been during the same period in a preceding year.

The executive committee of the Cooperative Pure Milk Association adopted on February 2, 1931, a definite schedule to determine the base quantity of milk for which its members would receive the basic monthly price. In other words, the cooperative computed the percentage of each member's base for which he would receive the basic monthly price, the excess to be paid for at a price figured on the value of milk for manufacturing purposes. Members who shipped regularly were favored in the computation of the bases as against those who were irregular shippers to the market. That is, a member who shipped every month would receive the basic monthly price for only 21 percent less than his average monthly shipments, an 11-months shipper 23 percent less than his average monthly shipments, and so on down to a member who had shipped only 4 months, who would receive the basic monthly price for only half of his average monthly shipments to the market. Members who shipped milk for 3 months or less received the manufactured milk price until their milk could be used for fluid purposes.

Bases for 1932 were the same as those established for 1931. In 1932, however, each producer was to be paid a blended or pool price based on total utilization of milk by the Cooperative Pure Milk Association using four classes of milk, as follows:

Class I. All milk sold as fluid milk.

Class II. All milk sold as sweet cream or when the skim is utilized for chocolate milk, buttermilk, cottage cheese, and standardized purposes.

Class III. All milk converted into sweet cream not utilized for butter.

Class IV. All milk converted into butter.

The price of class I milk was determined monthly with a differential of 4½ cents for each one-tenth point butterfat over or below 3.5 percent. Prices for class II and III were based on Chicago 92-score butter prices, plus an added value according to its utilization. The price of class IV milk was based on the price of 92-score butter. Milk shipped in excess of the monthly quota was paid for according to its usage.

Any producer who shipped less than his quota in any month had his monthly quota reduced for the following year. A shipper had the opportunity of requesting a reduction in his base quota, if he made it in writing before April 15 of any year, subject to the approval of the board of directors. If at the beginning of the year the total amount of quotas did not reach the pool requirements, active shippers were notified and were given the privilege of increasing their monthly base quota on a percentage basis by making written application. If, after the monthly pool was completed, it was found that some producers had shipped less than their allotted base quantities, the total of such deficiencies was then distributed on a uniform percentage basis to those producers who had shipped over their base quotas.

The foregoing plan, except for minor variations in the setting of basics from year to year, was continued by the Cooperative Pure Milk Association until July 1, 1934. During the life of the Ohio Milk Marketing Commission the Cooperative Pure Milk Association had its own pool and paid its producers according to the base ratings in effect at the time.

From 1931 to July 1, 1934, base ratings were set only once each year. After July 1, 1934, a new policy was adopted by the Cooperative Pure Milk Association whereby the total basic quantity was adjusted every 3 months in accordance with class I and II sales of the previous 3 months and this quantity was distributed among individual producers according to their own estimated ability to produce. The final result was to distribute the total basic quantity in such a way that it tended to bring into close relationship the class I and II sales and the milk actually produced in the two classes.

The total basic quantity to be distributed among producers in any 3-month period was determined by taking the total daily sales of the previous 3-month period and dividing it by the number of days involved. This figure was multiplied by 30, the number of days per month, and the result by 115 percent.[76] This gave the total basic

[76] The additional 15 percent was an allowance for variation in class I and II sales, the 100 percent, of course, being the estimated total of class I and II sales.

quantity available for distribution among producers in a 30-day period.

Although each producer had a yearly assigned base, he was permitted to estimate, previous to the beginning of each 3-month adjustment period, what he expected his monthly production to be during the coming 3 months. Some producers estimated this production to be less than their assigned base and some, more. Finally, the association allocated any undistributed base at the beginning of a quarterly period on a uniform basis to those producers who asked for increases.

At the end of each year the association prepares new bases for its producer members. The production record of each member for the past year is tabulated by months and if production of a member in any month was less than his monthly base, the deficiency is used in calculating the new base, but an excess over the base in any month is not used as an offset to the deficiencies. The sum of the monthly deficiencies are then totaled and divided by 12 to determine the average monthly deficiency and this sum deducted from the old base. The result is the "performed base", which is to be used in the calculation of the base for the coming year.

The "performed bases" of all members are then totaled and the result compared with the sales of class I and class II milk combined of the association. If these sales are greater than the sum of the "performed bases" of all members, then the association applies a uniform percentage to the "performed base" of each producer and thus increases each producer's base so that the total bases equal or closely approximate class I and class II sales. The percentage figure applied in January 1935 might be different than that applied later in the year, the association attempting to keep the total bases in line with the class I and class II sales. If, however, any producer did not want his base increased by this method he could refuse to take it and any base thus refused was then allocated by the association to those member producers desiring it.

The method of settling with producers used by the Cooperative Pure Milk Association early in 1936 was essentially the same as the plan adopted July 1, 1934.

It is claimed that the producer payment plan as used by the Cooperative Pure Milk Association has certain advantages over the base and surplus plan as usually applied. Instead of using the 3-month period of low production for the base period, as is usually done, production over a whole year is taken into consideration in setting the yearly base quota. Furthermore, each producer is permitted to adjust his base quota quarterly, and the undistributed base is given to those who can make use of it. If a producer overestimates his capacity to produce, he will bring about a reduction in his yearly base quota. If a producer has low production in any one quarter the yearly average tends to make changes in the yearly base quantity more gradual, thus working no hardship on the producer. Except for a small quantity of undistributed base each month to be used for new shippers and special cases, the undistributed base is given to those shippers most likely to use it.[77] And finally, because of the

[77] Usually from 25,000 pounds to 30,000 pounds.

flexibility of the plan, the basic allotments given producers are kept in close relationship with class I and II sales.

K. I. O. Milk Producers Association.—In May 1925 representatives of the K. I. O. Milk Producers Association met with distributor representatives for the purpose of formulating a base surplus plan for settling with producers, and the average deliveries during November and December 1924 and January 1925 was established as the base for the year 1925. In April 1926 the base was established on the average production of October, November, and December 1925 and January 1926, and the base for new producers was established at 60 percent of deliveries.[78] During the years from 1926 to 1933 the bases for each year continued to be established on the average deliveries during designated winter months.

In September 1930 distributors cooperating with the K. I. O. Milk Producers Association inaugurated the use or classification plan in addition to the base-surplus plan. At that time two classes were established within the base and the base of each producer was set arbitrarily at 60 percent class I and 40 percent class II. In other words, 60 percent of a producer's base was supposed to be paid for at class I prices and 40 percent at class II prices, and the excess of deliveries over the base quantity was to be paid for at surplus prices. The prices for the different classes varied from time to time up to October 1, 1933, when classification prices were established by order of the Ohio Milk Marketing Commission.

Prior to October 1, 1933, the K. I. O. Milk Producers Association was unable to obtain reports from distributors showing the quantities of milk purchased and the use made of it. The manager of the association stated that no attempt was made to audit the distributors' records, because such an attempt would have been useless, in view of the attitude of the distributors. Some distributors even objected to the association testing for butterfat.[79] About the only concession made by the distributors in respect to examination of their records was when an individual producer filed a complaint through the association, and then the distributor usually would permit an examination of the records involving the transactions with the complaining producer.

Under the Burk Act, the following plan of establishing basic allotments for producers was adopted:

(1) Bases of association members which were of record in the files of the associations prior to January 31, 1933, were continued.

(2) Bases of producers who were not members of associations, but whose bases were on record in the books of milk distributors January 31, 1933, were continued.

(3) Producers who had no established bases either as members of associations or as shown by distributors' records were allotted a base of 65 percent of their daily average production during the months of January, February, and March 1933.

(4) New producers, or producers who came into the market after January 1, 1933, were allotted a base of 45 percent of their daily average production for the 90-day period preceding August 16, 1933.

[78] In other words, new producers could only receive fluid milk prices for 60 percent of their deliveries.

[79] Payments to producers were based on butterfat content of the milk.

An order of the Ohio Milk Marketing Commission, effective July 1, 1934, provided that at the request of either group [80] in the market, an adjustment should be made of the total base milk (class I and class II) in the market and a proportionate share be allotted to each group, but that in no event should the total base milk in the pool be in excess of 115 percent of the average of the total sales of milk in class I and class II combined during the preceding quarter. This order further provided that the base milk allotted each group should be apportioned by each group to the producers within the group.

Under the Burk Act the distributors paid the producers a blended price per hundredweight for base milk (class I and class II) and the current price for surplus and those distributors whose percentage of class I and II sales amounted to more than the average for the market, made payments, or were expected to make payments, into an equalization fund. From this fund payments were made to distributors whose class I and II sales amounted to less than the average for the market. The receiver for the control committee under the Burk Act is still attempting to collect from some distributors who did not complete their payments to this equalization pool fund.[81]

At the first meeting of the pooling committee [82] of the Cincinnati Sales Association [83] after the expiration of the Burk Act, the bases as established under the Burk Act were continued, subject to certain minor changes. These changes, effective July 1, 1935, were as follows, according to the minutes of the Cincinnati Sales Association:

Producers who had a base allotment of 60 percent or less of their daily average shipments for March, April, and May, 1935, were given a base equal to 90 percent of their daily average shipments for those months.

Producers who had a base allotment of more than 60 percent and less than 80 percent of their daily average shipments for March, April, and May, 1935, were given a base equal to their existing base, plus 10 percent of the excess shipments.

Butterfat shippers [84] who shipped during March, April, and May, 1935, were given a base equal to 50 percent of their daily average shipments for those months.

The distributors' own production [85] was classed as 95 percent base.

Since July 1, 1935, the bases have been adjusted every 3 months and new bases were established as of October 1, 1935, and January 1, 1936. The total quantity of base allotted to producers has been approximately 115 percent of the cooperating distributors' utilization in class I–A as well as classes I and II.

The bases for the 3-month period of October, November, and December, 1935, were allocated by the pooling committee of the association on October 4, 1935, as follows:

Producers whose present base is in excess of daily average shipment for June, July, and August shall remain the same.

[80] The Cincinnati market area was divided into two groups as follows: Group A, the Cooperative Pure Milk Association and its distributing outlet; group B, the K. I. O. Milk Producers Association, the Milk Producers Union, independent producers, and cooperating distributors. Supra, sec. 12.

[81] Those interested in the operation of the Ohio Milk Marketing Commission will find its Bulletin No. 11, issued Aug. 8, 1934, of value.

[82] The pooling committee consists of representatives of the K. I. O. Milk Producers Association, the Milk Producers Union, and independent producers, and constitutes the governing committee of the Cincinnati Sales Association.

[83] Successors to Producers of group B of the Cincinnati sales area under the Burk Act.

[84] "Butterfat shippers" refers to new producers as well as to producers who had been selling to creameries or condenseries on a butterfat basis.

[85] A number of distributors produced some milk in addition to the quantity purchased.

Producers whose present base is more than 80 percent and less than 100 percent of daily average shipment for June, July, and August shall remain the same.

Producers whose present base is more than 60 percent and less than 80 percent of daily average shipment for June, July, and August shall have their present base increased by 8 percent of their daily average surplus shipment for June, July, and August, unless such increase added to their old base would equal less than 65 percent of June, July, and August average shipment. In this case, their base shall be adjusted to 65 percent of their daily average shipment for June, July, and August.

Producers whose present base is less than 60 percent of their daily average shipment for June, July, and August shall be increased to 65 percent of their daily average shipment for June, July, and August.

Butterfat shippers shall be given a base equal to 50 percent of their daily average shipment for the 3-month period of June, July, and August.

Own production shall be classed as 95 percent base.

On December 23, 1935, the pooling committee set the bases for January, February, and March, 1936, as follows:

Producers whose present bases are in excess of their daily average shipments for September, October, and November, 1935, shall remain the same.

Producers whose present bases are in excess of 90 percent of their daily average shipments for September, October, and November, 1935, shall remain the same.

Producers whose present bases are in excess of 80 percent and less than 90 percent of their daily average shipments for September, October, and November, 1935, shall have their present base increased by 10 percent of their daily average excess shipments for September, October, and November, 1935.

Producers whose present bases are less than 80 percent of their daily average shipments for September, October, and November, 1935, shall have their base increased to 80 percent of their daily average shipments for September, October, and November, 1935.

Butterfat shippers shall be given a base equal to 50 percent of their daily average shipments for the 3-month period of September, October, and November, 1935.

"Own production" shall be classed as 95 percent base.

On or before the 10th day of each month, each distributor cooperating with the Cincinnati Sales Association is required, under the terms of the agreement, to submit a report of the previous month's receipts and sales. The reports of sales cover the dealer's utilization and give the class sales by pounds, sales by different sizes of units, and total butterfat in pounds. From these reports the association prepares its statements or bills to the distributors and each distributor is charged according to the utilization or classes in which he sold the milk at the class prices set forth in the agreement.

As the distributors pay according to their sales utilization, those having the greater percentage of class I sales have to pay a higher price per hundredweight for their milk than distributors with a lower percentage of class I sales. There are no equalization payments either from distributors to the pool or from the pool to distributors. In other words, although all producers involved in the sales by the distributors operating under the agreement receive the same blended price per hundredweight for their milk, f. o. b. Cincinnati, the distributors have different costs of milk which vary according to their utilization.

As a basis on which to ascertain the amount due each producer, the Cincinnati Sales Association each month delivers to each distributor a receiving report form bearing the names of the producers shipping to the distributor and the quantity of base allocated to each producer. On this form the distributor indicates the total

number of pounds of milk, the number of pounds of base milk, the number of pounds of excess or surplus milk, and the total pounds of butterfat, received from each producer; also the average butterfat tests for the month, and the hauling and other deductions for each producer. Thereupon the receiving report is returned to the association and the association's auditor completes the report by indicating the price per hundredweight of the base and of the surplus milk, the value of each producer's base and surplus milk, and the gross amount due each producer. The auditor also deducts 1 cent per hundredweight on base milk for the dairy council and 4 cents per hundredweight on all milk delivered to cover the producer's dues in his cooperative, if any, and the dues for the Cincinnati Sales Association. These deductions are subtracted from the gross, and the result is the net amount due each producer.

From the information contained in the receiving report, the association prepares checks to the producers for the net amounts due. A statement is attached to each producer's check, which contains detailed information concerning his account, as shown by the receiving report. The form of check and statement used is to be commended.

It will be noticed that the agreement between the Cincinnati Sales Association and the milk distributors provides (see clause 8) that the "aggregated total of all delivered base milk of all producers shipping to the pool shall be maintained as near as possible at 115 percent of the total quantity of milk sold in the market for Class I, Class I–A, and Class II uses." Producers' bases are to be revised every 3 months so as to maintain this percentage. The purpose of this provision of the agreement, it is claimed, is to make certain that the quantity of milk available for fluid purposes is always sufficient for the possible demands of the market.

Practical application of K. I. O. milk settlement plan.—Before presenting a discussion of the practical application of the milk-settlement plan used by the K. I. O. Milk Producers Association and the distributors cooperating with it as modified on September 1, 1930, it may be well to point out the possibilities of a serious effect the operations of this group might well have had on one of its chief competitors, the Cooperative Pure Milk Association.

As has been previously pointed out in this discussion of the Cincinnati market, attempts of the producers, first, to organize the association which later became the Cooperative Pure Milk Association, and second, attempts of this group to distribute its members' milk to consumers, were met by the bitter antagonism of the milk distributors of that area. This antagonism was expressed in many ways, some of them perhaps illegal.

The settlement plan used by the distributors working with the K. I. O. permitted them to obtain a substantial part of their class I milk sales at surplus prices, thus giving these distributors a competitive advantage which could only intensify the difficulties of the Cooperative Pure Milk Association. This will be more clearly seen from the following explanation.

As previously stated, on September 1, 1930, the distributors cooperating with the K. I. O. Milk Producers Association modified the existing base surplus plan under which it had been operating. Under this modified plan every producer was supposed to receive the class I price for 60 percent of his base, the class II price for 40 percent of his base, and the surplus price for all milk delivered in excess of his base. The theory was that the 60 percent to be paid producers at the class I price would result in a quantity of milk at this price which would equal, or at least fairly closely approximate, the total sales of class I milk by all distributors. Similarly, the 40 percent factor was supposed to equal the total sales of distributors in class II.

To fully appreciate the possibilities this plan had for the distributors, certain facts must be kept in mind. First, it should be remembered that the base of a producer was fixed by the distributor to whom he shipped. Second, the cooperative did not audit the books of distributors and had no knowledge as to how these bases of producers were handled by the distributors and performed no real service in protecting producers, from whom they received dues, against exploitation by distributors in the method of calculating milk settlements with the producers. Third, the cooperative did not know whether 60 percent and 40 percent equaled, or even closely approximated, the class I and class II sales, respectively, of the distributors.

Under the plan of settlement with the so-called members of the K. I. O., some of the distributors at Cincinnati paid their producers as follows: If a producer delivered less milk than called for by his base, he received the class I price for 60 percent of the milk delivered, and not 60 percent of the base amount, and the class II price for 40 percent of the milk delivered. Producers who delivered in excess of their base were paid 60 percent of their bases at the class I price and 40 percent of the bases at the class II price and the balance of the milk delivered was paid for at the surplus price. It follows, therefore, that, if the distributor could adjust the bases of his shippers so that there would be some producers who would not deliver up to their bases and others who would deliver in excess of their bases, he would be able to get a part of his class I requirements or his class II requirements, or part of both his class I and his class II requirements, at surplus prices. In other words, the deficiency in the total fluid requirements of a distributor created by those producers who shipped less than their bases could be made up from the excess over their respective bases shipped by other producers.

In order to show the effect on producers of the September 1, 1930, modifications of the K. I. O. plan, the class I and class II purchases and sales of two Cincinnati distributors are related to each other for the years 1931 and 1932 and the first 9 months of 1933. The relationships for the class I purchases and sales are figured on three different methods of settlement.

The first of these methods of calculation used involves class I sales taken as the actual number of quarts sold and compared with the quantity of milk paid for at the class I price.

The second comparison is made with class I sales converted to a 4-percent butterfat basis and compared with the number of quarts of milk paid for at class I prices.[86]

[86] This calculation of sales to a 4-percent butterfat basis was made because the Ohio Milk Marketing Commission made an effort to have distributors convert their class I sales to the butterfat base of the class I price (4 percent) although the base fixed by the Ohio commission was 3.7 percent instead of 4 percent.

The third comparison is made with the class I sales of these two distributors converted to the average butterfat test of the milk as purchased by them and compared with the number of quarts of milk paid for at class I prices.[87]

The excess of the number of quarts of milk sold in the form of cream (class II) over the number of quarts of milk paid for at the class II price has also been computed on the basis of converting the cream sold to the basis of the average butterfat test of the milk purchased. This method of calculating class II purchases and sales is the one which gives to the distributors full credit for paying for their milk on the best of the three methods of settlement from the standpoint of the producers.

The following tabulation shows the relationships between class I sales and class I purchases on the three different methods of calculation mentioned above and the class II sales and class II purchases on the last-mentioned method.

Year	Milk paid for at class III prices and sold as fluid milk [1]			Milk paid for at class III prices and sold as class II (fluid cream) [2]
	Calculations based on class I sales as actual quarts of milk sold	Calculations based on class I sales converted to 4 percent butterfat	Calculations based on class I sales converted to butterfat test of milk purchased	
	Quarts	*Quarts*	*Quarts*	*Quarts*
1931	888,232	352,120	99,124	482,538
1932	1,389,138	859,876	635,590	562,351
1933 [3]	1,118,373	809,393	690,653	678,866
	3,395,743	2,021,389	1,425,367	1,723,755

[1] Fluid milk sales figures include fluid milk sold on wholesale and retail routes only.
[2] Class II sales were converted to the butterfat test of milk purchased.
[3] For 9 months only.

It should be understood in considering the foregoing tabulation that the quarts of milk shown in the class I calculations were not paid for at the class I price but were obtained by the distributors at the class III prices, and the class II quarts shown were also paid for at class III prices. In other words, figuring the class I transactions of these two distributors on the basis most favorable to producers and least profitable to the distributors, in the period covered by the tabulation, they used 1,425,367 quarts of milk for their class I sales for which they had paid the class III price. This quantity of milk represented approximately 10 percent of the total class I sales of these two distributors for this period. On the basis of calculations least favorable to the producers and most profitable to the distributors, 3,395,743 quarts of surplus milk were used for class I sales, this being approximately 21 percent of the total class I sales of the two companies for the period in question.

The quantity of milk paid for at class III prices and sold as class II milk by these two distributors was 1,723,755 quarts for the period covered by the tabulation. As previously stated, this class II comparison is on the most favorable basis from the standpoint of the producers and the least profitable method for the distributors. These 1,723,755 quarts represented about 25 percent of the total class II sales of these two distributors over this period.

[87] At the time of the Commission's inquiry some of the Cincinnati distributors maintained that class I sales should be converted to the butterfat test of milk purchased to determine the quantity of milk to be paid for at class I prices. As the butterfat test of milk purchased was in excess of the butterfat basis of the class I price (4 percent), some butterfat paid for at the butterfat differential price would be sold at class I, if class I sales were converted to the butterfat test of milk purchased in order to determine the quantity of milk to be paid for at the class I price.

Lack of time prohibited a detailed analysis of the milk settlements with the producers of these two distributors for every month of the period under discussion. It was possible, however, to analyze the September 1933 settlement with producers of one of the two companies and two important facts are revealed as a result. First, the 60 percent of the total producer bases for class I milk was less than the distributor's class I sales, except when the class I sales were calculated on the basis of the butterfat test or content of the milk purchased, and that 40 percent of the total producer bases representing class II milk, however, was in excess of the distributor's class II sales. Second, a substantial number of producers shipped less than their respective bases and the presence of these producers operated to decrease the quantities of milk to be paid for at class I and class II prices. Other producers shipped more milk than was called for by their bases and thus made available a supply of milk which was paid for at class III prices which was available for use in the distributor's class I and class II sales.[88]

The Commission believes that the situation existing in Cincinnati during the period under review in this discussion is worthy of emphasis even at the risk of repetition. The K. I. O., which was supposed to represent the producers, did not make any audits of distributors' records, and had no control over the bases allotted to producers. When such a situation is found to exist it lends weight to the allegation, commonly heard in Cincinnati, that the K. I. O. was organized by and in the interest of the distributors and was dominated by them. The ineffectiveness of the K. I. O. in safeguarding the producers, who contributed dues to the upkeep of the association, is further indicated by the statement of an official of one of the Cincinnati milk distributors to the effect that his firm had "no relations with the cooperative (K. I. O.) except to send it a check-off from all producers." The use of the word "cooperative" in referring to an organization such as the K. I. O. seems, therefore, scarcely appropriate, at least in the period under discussion. Certainly under the arrangement discussed in this section, the producer had little or no chance of fair treatment and was obliged to take what the distributor chose to give him.

Milk settlements under the Ohio Milk Marketing Commission.—Milk settlements made by Cincinnati distributors with their producers from October 1933 through June 1935 were supposed to be made under the regulations of the Ohio Milk Marketing Commission.

An extract from exhibit 3, schedule of prices and rules for purchasing milk from producers, of official order of the Ohio Milk Marketing Commission for the Cincinnati Market Sales Area, dated September 27, 1933, reads as follows:

> The prices to be paid any producer by the distributor purchasing such producer's milk shall be determined as follows:
>
> Class I milk shall be that sold for bottled and bulk milk both plain and flavored for fluid consumption, reduced to a basis of 3.7 percent butterfat.

[88] A similar situation was found in the course of the inquiry at Philadelphia and is discussed in the report of the Federal Trade Commission, House Document No. 387, 74th Cong., 2d sess., pp. 14–17.

Class II milk shall be that sold for bottled and bulk cream, bottled and bulk buttermilk, and cottage cheese for fluid consumption, reduced to a basis of 3.7 percent butterfat.

Class III shall be the remainder of the milk not sold as Class I or II within the basic quantity, and the quantity received in excess of base.

Each distributor shall report to the Control Committee by the 10th of each month the previous month's purchases and sales of milk in the forms listed in Class I, II and III.

The auditor of the Ohio Milk Marketing Commission maintained that, under the terms of the above-quoted order, distributors were required to determine the quantities of milk to be paid for at class I and class II prices by converting class I and class II sales to a 3.7 percent butterfat basis as expressly stated in the order. The quantity of milk not paid for at class I and class II prices would be paid for at the class III price. The distributors, including the Cooperative Pure Milk Association, however, interpreted the order to mean that class I and class II sales should be converted to the basis of the average butterfat test of milk purchased to determine the quantities of milk to be paid for at class I and class II prices. The quantity of milk remaining would be paid for at the class III price. The average butterfat test of the milk sold to consumers by the distributors in Cincinnati was slightly over 3.7 percent. In other words, the order of the Ohio Milk Marketing Commission provided for settlement on the basis of a butterfat percentage which closely approximated the butterfat content of the milk as sold by the distributors.

The significance of the distributors' interpretation of the milk order can best be understood by an illustration of the effect of such interpretation upon the proportion of milk to be paid for at each class price. This comparison appears in the following tabulation, 3.7 percent butterfat test being used as a base or 100 percent.

Butterfat test of milk (per cent):	*Index of proportion of milk to be paid for at class I and class II prices on basic of 3.7 percent butterfat test as 100*
4.5	82.22
4.4	84.09
4.3	86.05
4.2	88.10
4.1	90.24
4.0	92.50
3.9	94.87
3.8	97.37
3.7	100.00
3.6	102.78
3.5	105.71
3.4	108.82

As the tabulation shows, the higher the butterfat content of milk actually received over the base of 3.7 percent, the smaller the proportions of class I and class II sales would be paid for at class I and class II prices. In other words, if the average butterfat content of milk received by a distributor was 4 percent, only 92.5 percent of his class I and class II sales would be paid for at the prices for those classes. If the butterfat content was below the base (3.7 percent) then, of course, the distributor would, theoretically, be supposed to pay for more milk than he actually sold in classes I and II. This last, however, was not a source of worry to the Cincinnati distributors as the average butterfat content of milk received by them during the period in question was nearer to 4 percent than it was to 3.7 percent.[89]

It is equally important to bear in mind, of course, that the smaller proportions of total sales of milk reported as class I and class II sales, the greater the proportion which is forced down into class III, since all milk not paid for at class I and class II prices was to be paid for at class III prices.

As the average monthly butterfat tests of milk purchased were substantially in excess of 3.7 percent, the conversion of class I and class II sales to the butterfat test of milk purchased was decidedly to the advantage of the distributor, as not only would smaller quantities of milk be paid for at class I and class II prices but larger quantities would be paid for at class III prices.

This controversy between the distributors and the local Cincinnati control committee over the butterfat basis of settlement to be used was not taken before the State commission for settlement. It was decided by the parties involved. A new price arrangement was set up whereby the distributors were permitted to follow their plan of figuring their class I and class II sales, and in return the prices they were to pay producers for class I and class II milk were each increased 5 cents per hundredweight, from $1.90 and $1.40 respectively.

This arrangement was a compromise by which the distributors lost comparatively little. The method of using the average butterfat test of milk purchased still had the effect of forcing more milk into class III than was actually used for manufacturing purposes. Furthermore, the butterfat differential for fat in excess of the base, 3.7 percent, was paid for at 3 or 4 cents[90] per one-tenth of 1 percent and as the milk received averaged well over 3.7 percent butterfat, the excess was bought at such low prices as to more than offset the 5 cents per hundredweight increase given the producers. (See chap. III, sec. 2.)

One Cincinnati distributor computed his milk settlements for October 1933 on three bases; viz, first, according to the interpretation of the auditor of the Ohio Milk Marketing Commission; second, on the interpretation of the distributors; and, third, according to the ruling of the local control committee. The computations showed that the cost of milk would have been 5.83 percent higher on the basis of class I and class II sales converted to 3.7 percent butterfat as compared with the conversion to the butterfat test of milk purchased. Computed on the basis of the ruling of the local control committee the result was to divide the 5.83 percent excess between the producer and distributor, the actual proportion being 65 percent for the distributor and 35 percent for the producer. The net result of the ruling was to make the distributor's cost of milk 3.6 percent less than the costs would have been on the basis of class I and class II sales converted to the basis of 3.7 percent butterfat.

[89] Between October 1933 and March 1934 the butterfat tests of milk purchased by 3 Cincinnati distributors ranged from over 4.18 percent to over 4.33 percent; for 2 distributors during the next 9 months the range was from over 3.86 percent to over 4.23 percent; for the 6 months ending in June 1935, the average butterfat test of milk purchased by all distributors reporting to the Ohio Milk Marketing Commission ranged from over 3.92 percent to over 4.09 percent.

[90] The butterfat differential was 3 cents per point if the Chicago price of 92-score butter was below 30 cents. The differential was 4 cents if the butter price was 30 cents or over.

The reports of all the Cincinnati distributors, who reported to the local control committee, were examined for the first 6 months of 1935.[91] Milk settlements were calculated by the distributors by converting class I, including class I–A, and class II sales to the butterfat test of milk purchased in accordance with the compromise. The quantities of milk actually paid for at each class price as compared with the quantities that would have been paid for at each class price, had class I and class II sales been converted to the basis of 3.7 percent butterfat test, are shown in the following tabulation:

Utilization of milk as reported by Cincinnati distributors[1] on basis of average butterfat test (3.9861 percent) of milk received, compared with utilization on basis of 3.7 percent butterfat test, in quarts, for first 6 months of 1935

	Class I [2] and class II sales reported on basis of average butterfat test of milk received. (3.9861 percent)	Class I [2] and class II sales computed on basis of 3.7 percent butterfat test	Number of quarts by which class I and class II sales were lowered and class III sales increased	Percent of difference
	Quarts	*Quarts*		
Class I [2]	25,513,485	27,459,750	1,946,665	−7.6
Class II	7,181,623	7,757,419	575,796	−8.0
Class III	12,274,267	9,751,806	2,522,461	+20.6

[1] The distributors involved are those who cooperated with the local control committee.
[2] Includes class I–A.

If class I and class II sales had been converted to 3.7-percent butterfat, the quantities of milk paid for at class I and class II prices by the distributors covered by the table would have been 1,946,665 and 575,796 quarts, or 7.6 and 8 percent, respectively, in excess of the quantities actually paid for at the two class prices. The quantity of milk paid for at the class III price would have been 2,522,461 quarts, or 20.6 percent, less than was actually paid for at that price.

SECTION 15. THE ST. LOUIS MILKSHED

The St. Louis market receives about 80 percent of its milk from Illinois and 20 percent from Missouri. Half the milk is trucked directly to the city by haulers engaged by dealers. Four-fifths of that which goes to country receiving stations is also trucked by such haulers; producers themselves determine who shall haul the balance.

Cash milk income in the State of Missouri was $48,657,000 in 1929 and declined 48.3 percent to $25,148,000 in 1932 and 49 percent to $24,835,000 in 1933. Milk income in the State rose to $27,176,000 in 1934, or 9.4 percent above 1933. In the State of Illinois the declines were less pronounced, 39.6 percent from $86,977,000 in 1929 to $52,532,000 in 1932 and 41.9 percent from 1929 to $50,492,000 in 1933. Milk income in Illinois rose to $58,263,000 in 1934 or 15.4 percent above 1933. Cash milk income in 1934 was 44.1 percent below 1929 in Missouri and 33 percent below 1929 in Illinois.

[91] This period was the last 6 months of the life of the Ohio Milk Marketing Commission.

Between 1929 and 1932 cash farm income declined proportionately in both States, the decline amounting to 55.7 percent in Missouri and 53.8 percent in Illinois; 1933 farm income was 18.5 percent above 1932 in Missouri and 9.9 percent in Illinois; 1934 farm income was 40 percent above 1932 in Missouri and 33.7 percent in Illinois; 1934 cash farm income in both States was about 38 percent below 1929.[92] In both States farm income was lowest in 1932 and milk income was lowest in 1933.

In Illinois, which supplies St. Louis with most of its milk, cash milk income rose 15.4 percent during 1934, whereas milk prices increased only 13.3 percent. Slightly larger production in 1934 than 1933 helped the increase in milk income to exceed the change in prices during 1934. In Missouri, milk income increased 9.4 percent, but milk prices increased 20 percent. Missouri milk production was smaller in 1934 than in 1933.

Increases in cash farm income in Missouri approximated the increasing price levels for the products of the farms between 1932 and 1934. In Illinois, farm prices increased about 10 percent faster than farm income.

Milk accounted for about 13 to 17 percent of farm income in Missouri and 17 to 22 percent in Illinois. For the portions of the States lying near St. Louis, the proportion of milk to farm income is probably higher.

There has been an upward trend in milk production in the State of Illinois throughout the depression. In Missouri milk production increased until 1931, but has decreased each year since. But there has been a continual decline in production per cow in both States, from 4,650 pounds in the State of Illinois in 1929 to 4,380 in 1934, and from 3,750 to 3,280 pounds in Missouri in the same period.[92a]

Although 28 counties in Illinois and 24 in Missouri ship milk to St. Louis, only four Illinois counties—Madison, Clinton, St. Clair, and Washington—account for almost half the milk going into the area.[93]

About 12,000 producers supply the St. Louis market, of whom 10,000 are located in Illinois and 2,000 in Missouri. About 8,000 of all these shippers are members of the Sanitary Milk Producers, Inc. In March 1934 this cooperative is reported to have handled 40 percent of the sales in the St. Louis area and over 67 percent in June 1935.

Until 1934, when St. Louis health authorities required registration of producers and quality inspection of their farms, there was considerable shift of producers in and out of this market, depending upon whether St. Louis prices were more favorable than condensery

[92] Farm income in the 2 States was:

	Missouri	Illinois
1929	$333,658,000	$510,235,000
1932	147,827,000	235,535,000
1933	175,287,000	258,789,000
1934 [1]	206,835,000	314,826,000

[1] Includes Government purchases.

[92a] Estimated by the Division of Crops and Livestock Estimates, Bureau of Agricultural Economics, U. S. Department of Agriculture.

[93] For the year ended May 31, 1934, these 4 counties shipped 186,700,000 pounds or 45 percent of the sales reported in St. Louis.

prices at Greenville, Ill. Differentials between f. o. b. country station prices in the 40–50-mile zone for milk going to St. Louis and Greenville are so small, usually from 15 to 20 cents per hundredweight, that many shippers do not try to meet the stricter requirements involved in shipping to St. Louis.

The St. Louis sales area includes the city of St. Louis and towns contiguous to it. Most of the dealers operate in several of these towns. The sales of three distributors account for 65 percent of sales in the area. The 1930 census records metropolitan St. Louis population as 1,472,895; it is the largest city in the Mississippi Valley. Its manufactured products are largely consumption goods, to a greater extent, perhaps than is true for most cities; yet it is also important as a manufacturing center for transportation vehicles and machinery.

According to statements made to examiners of the Commission, the St. Louis milkshed was entirely dealer-dominated until the advent of the Sanitary Milk Producers cooperative in 1930. Until that time no producer organization had ever been strong enough or had existed for a long enough time to really represent the producers in the area. Even at the present time, it is claimed that, except for the Agricultural Adjustment Administration's control of the market, the producer is potentially more or less at the mercy of the distributor, as St. Louis is a surplus area insofar as its milk supply is concerned. For the period from March 1934 through August 1935, inclusive, for example, 42.1 percent of the 669,472,326 pounds of milk purchased by St. Louis distributors was sold as class III or surplus.

The enactment of stricter sanitary regulations in 1934 had made it more difficult to get a new supply of milk on short notice and to that extent the bargaining position of the cooperative has been strengthened. Before 1934 distributors were able to find a new milk supply without much difficulty.

The concentration of sales among a relatively few distributors in the St. Louis sales area is indicated by the fact that of the 11,791 producers sending milk to these distributors in August 1935, three companies took the supply, furnished, respectively, by 3,848, 2,364, and 1,049 producers, or about 62 percent of the total. The next distributor in point of number of producer-shippers had 747. Furthermore, the three largest St. Louis distributors handled approximately 65 percent of the milk sold in the St. Louis marketing area, the remaining 70 distributors accounting for balance. Competitively, the relative position of distributors and the cooperative association is indicated by the fact that the dominant distributor in the market absolutely refused to purchase milk through the association until the Federal agreement and license became effective in St. Louis.

Due to the fact that a number of condenseries are located in the St. Louis shed ready to absorb the surplus milk supply, there has always been a close relationship between condensery prices for milk and the price received by the producer shipping milk to St. Louis. It was claimed by an official of the cooperative that there has probably been a closer relationship between St. Louis class I prices and the price of butterfat than in most of the important milk markets in the United States.

Sanitary requirements.—The city of St. Louis passed a milk ordinance in 1928 in which provision was made for inspection of farms of producers supplying milk to the city. Owing to insufficient personnel, adequate inspection by the city health authorities could not immediately be put into effect. The distributors had their own inspectors who made farm inspections. Each dealer is reported to have made his own interpretation of the city ordinance and the rules and regulations thereunder. This resulted in considerable confusion and misunderstanding among the producers in respect to sanitary requirements.

In 1931 an attempt was made by the city health authorities to enforce compliance with the 1928 ordinance, particularly with reference to milk houses on dairy farms, but this was abandoned with the result that uninspected milk continued to come to the St. Louis market.

In 1934 an active campaign was inaugurated by the St. Louis health authorities and the local consumers' council in behalf of adequate inspection. This campaign was carried on through the St. Louis newspapers and in this way the general public was informed concerning the high bacteria content of the St. Louis milk supply, and of the health menace of unsanitary milk.

Three attempts were made to pass a new and better milk ordinance before these efforts met with success. One ordinance finally passed by the board of aldermen was vetoed for the reason that it did not contain a provision for funds with which to make the ordinance effective.

On September 28, 1934, about 28 of the larger milk distributors of St. Louis, and the Sanitary Milk Producers, Inc., which represented about 11,000 producers, executed an agreement whereby the Sanitary Milk Producers, Inc., and the cooperating distributors proposed to finance inspection of farms supplying milk to St. Louis. This agreement was contingent upon the approval of the milk ordinance previously passed which had been vetoed by the mayor. On November 22, 1934, the ordinance was approved. It included a provision by which the services of inspectors who received their compensation from sources other than the municipality could be utilized. This provision, incorporated under section 30 of the November 22, 1934, ordinance, read as follows:

> The Health Commissioner is hereby authorized to accept the services of such competent field milk inspectors as may be furnished him. Said inspectors, when accepted by the Health Commissioner, shall have full power and authority to enforce the provisions of this Ordinance under the direction of the Health Commissioner.

On December 22, 1934, the organization proposed by the Sanitary Milk Producers, Inc., and a group of distributors for carrying out the provisions of the ordinance was incorporated under the name of the Dairy Commission of St. Louis.

Under the bylaws, representatives of the membership of the Dairy Commission are designated as follows:

> (*a*) The Health Commissioner of St. Louis shall certify * * * the name of the person to represent the Health Commissioner of the City of St. Louis.

(*b*) The Consumers' Council of St. Louis and St. Louis County * * * shall certify * * * the names of three persons to represent the public.[84]
(*c*) The distributors * * * shall certify * * * the names of three persons to represent such distributors * * *;
(*d*) The producers * * * shall * * * certify the names of three persons to represent such producers * * *.

A statement of the assets and liabilities of the Dairy Commission of St. Louis as of January 31, 1936, shows that there was due from distributors the sum of $432.15 and from producers the sum of $9,737.32. The Trade Commission is informed that subsequent to January 31, 1936, the amount unpaid by the producer association had increased to approximately $13,000. However, from correspondence in the files of the Dairy Commission, it appears this is due, in part, at least, to a disagreement relative to the question of whether the producer association should pay to the Dairy Commission, the 1 cent per hundredweight check-off on milk shipped to distributors who were not parties to the agreement referred to above.

The primary objective of the Dairy Commission is to inspect dairy farms and to work in conjunction with the city health commissioner of St. Louis in order to improve the quality of the milk supply. The Dairy Commission originally proposed that it engage 20 inspectors. By March 1, 1935, 19 field milk inspectors had been employed and each inspector was alloted certain specified territory by the St. Louis health commissioner.[85]

In less than a year after the field inspectors had been appointed, all the farms of which the St. Louis health commission had a record, were inspected.[86] This is the first complete farm inspection in the St. Louis milkshed, as heretofore such farm inspections as had been made were on the basis of samples. While an adequate sample perhaps would indicate the general standards of the production area, an inspection of each individual farm is necessary, of course, in order to insure a sanitary milk supply. Now, each new shipper must be inspected before a permit may be issued by the St. Louis Health Department.

When the inspectors' reports show that dairy farms do not comply with the sanitary requirements, the producers are given a reasonable time within which to make improvements or install equipment required to comply with the ordinance and if they fail to comply, permits are withheld, suspended, or revoked. This necessitates more than one inspection of farms of producers who fail to comply with the sanitary requirements.

It was stated to examiners of the commission that prior to 1934 the milk supply of St. Louis was unclean and contained a high bacteria count and was often in such condition that it would curdle during the pasteurization process unless certain chemicals were added. Since the new ordinance was approved under which more extensive inspection is provided, the general quality of milk as received from the producers is greatly improved and pasteurized milk now consumed in St. Louis, it is claimed, has a bacteria count comparable to that of other cities having adequate inspection. The city health commissioner stated that while there has been great improvement in the St. Louis milk supply, a further improvement will be brought about during the current year as producers generally are cooperating with the health authorities and are improving their farms and equipment in order to comply with the city ordinance.

It is alleged that some producers who cannot or do not comply with the sanitary requirements and are refused permission to sell their milk in the St. Louis market, either ship their milk through the cooperation of obliging neighbors as their neighbors' milk to distributors for consumption in St. Louis, or sell it to condenseries. When milk from a farm which has been refused a permit or whose permit has been suspended or revoked is shipped through the cooperation of a neighbor, the haulers usually are cognizant of the source of the milk. However, as the haulers' pay is contingent upon the quantity of milk delivered, it is to their interest to haul all the milk they can obtain.

Milk condemned by the health department, as well as milk from producers not permitted to ship into St. Louis, is sold to condenseries as, at present, rules and regulations of the health division do not apply to condenseries. The St. Louis Health Department, however, proposes to prepare rules and regulations pertaining to condenseries at an early date.

The superintendent of milk control of the health department and three other veterinarians supervise city and plant inspection. They are assisted by 12 inspectors who gather samples and inspect distributors' plants. The superintendent of milk control and his assistant supervisors and the city inspectors receive their compensation from the city of St. Louis through the department of public welfare.

City inspectors check the weights of producers' shipments to distributors in order to determine whether such shipments are increasing. If shipments show a material increase, it indicates that the producers either have additional cows which should be inspected or that they may be shipping milk for a neighbor who has been refused permission to ship to the St. Louis market.

The city inspectors inspect pasteurization plants and fill out plant inspection forms or score sheets. When upon inspection it is found that plants are not kept in a reasonably clean condition or that any other requirements of the city ordinance are not complied with, or when it is found that the sale of milk from plants would endanger public health, a hearing is held to determine whether permits should be issued, or, if permits have been issued, to determine whether they should be revoked.

City inspectors also gather samples of milk from wagons and stores. If a sample proves bad, the inspector visits the plant in which the milk was pasteurized or prepared for distribution in order to ascertain whether the plant equipment is defective and to assist in remedying such a condition.

[84] The Consumers Council of St. Louis and St. Louis County was organized in May 1934, and has been interested in improving the quality of milk consumed in St. Louis and vicinity, and assisted in the passage of the ordinance of Nov. 22, 1934. (St. Louis Milk Problems, by R. W. Bartlett, University of Illinois Agricultural Experiment Station Bulletin 412, p. 138.)

[85] Effective Apr. 16, 1935, the salaries of 5 of these inspectors were paid through the office of the Federal market administrator. This action by the market administrator was taken in order that all the expense of inspection should not fall upon the Sanitary Milk Producers, Inc., and the distributors who had signed the agreement, as such association and distributors do not represent the entire production and distribution of the market. The office of the market administrator paid the salaries of 3 of these inspectors from Apr. 16, 1935, to December 1935 and paid the salaries of the remaining 2 inspectors from Apr. 16, 1935, to Feb. 1, 1936. Since Feb. 1, 1936, the salaries and expenses of the 19 inspectors have been paid by the Dairy Commission of St. Louis.

[86] From the time of their appointment to Jan. 31, 1936, the field inspectors completed 20,971 farm inspections.

SECTION 16. THE SANITARY MILK PRODUCERS, INC.

Various attempts have been made to organize the producers in the St. Louis milkshed from the time of the World War to the time the Sanitary Milk Producers, Inc., came into existence. These ventures ranged from the bargaining type of cooperative to the marketing type, but the results were not satisfactory so that many producers became rather suspicious of cooperative effort.

In February 1929 a committee of 19 producers, 1 from each county then in the St. Louis shed, was called together for the purposes of studying the dairy industry in and around St. Louis and considering the possibility of organizing the producers into an active cooperative organization. The Illinois Agricultural Association and the Missouri Farm Bureau Federation assisted the committee.

After meeting 1 day a week for 8 weeks, the committee made its report, the gist of which is contained in the following excerpt from its report and recommendations:

> On February 28, 1929, about 150 dairymen of the St. Louis milkshed met in the Broadview Hotel for the purpose of discussing the dairy marketing situation in the St. Louis district. After a lengthy discussion the dairymen present seemed to think that the following program would best fit the needs of milk producers of the district:
>
> 1. Standardize and Improve Quality.
> 2. Collective Bargaining in Selling.
> 3. Surplus Control—Sound Selling Plan.
> 4. Check-up on Weights and Tests.
> 5. Watch Credit Rating of Buyers.
> 6. Issue Truthful Market Information.
> 7. Educational Advertising—Increase Use.
>
> The committee in its general survey of the St. Louis market found that sixty-two hundred farms, 80 percent in Illinois and 20 percent in Missouri, from 14 Illinois counties and 5 Missouri counties supply this market. The average dairy produces about 112 pounds daily. The Chicago average is 289, Peoria 92, and Quincy 165.
>
> The dairymen in this area would be considered low-producing or sideline dairymen. Production fluctuates more from the lowest month to the highest month at St. Louis than any other market in this section.
>
> Sixty-eight percent of the milk is handled through 53 county milk-receiving stations. Forty-nine are located in Illinois. Three of the 49 pasteurize and bottle milk in the country. Besides the four milk-receiving stations in Missouri there are two other stations which handle sweet cream only.
>
> Thirty-eight plants in St. Louis and two in East St. Louis pasteurize milk for fluid consumption. Two large pasteurizers at Highland, Illinois, and a smaller one at Waterloo supplement the milk supply at these plants. In addition 18 milk peddlers in St. Louis and 14 in East St. Louis who do not operate pasteurizers but purchase milk from dealers and deliver milk.
>
> The consumption of milk is 0.666 pint per capita. In Chicago it is 0.801 pint, and in Peoria, 0.681 (milk and cream combined). It takes about 700,000 pounds of milk daily to supply St. Louis with milk and table cream.
>
> The population of St. Louis is 848,100, and East St. Louis is 66,767. A large proportion of this population is negroes who do not consume as much fluid milk as whites, but drink much more buttermilk per capita, and eat more soft cheese than whites.

In April 1929 the representatives from the 19 counties met again and a proposed plan of organization was presented to them. It was favorably received and the group went ahead with this plan.

Those in charge of organizing the new cooperative went directly to the consumers in their fight for recognition. They invited a group of St. Louis citizens to a meeting, and as a result the Consumers Milk Commission was formed. This commission appointed a fact-finding committee which held hearings throughout the St. Louis milkshed.

The report of this committee presents such a comprehensive picture of conditions in the St. Louis area as they were at the time, that it is presented in this report as appendix D.

The association was incorporated May 10, 1930, as the Sanitary Milk Producers, Inc., under the Cooperative Marketing Act of Illinois. It was also licensed to do business in Missouri. In 1930 it had an estimated membership of 8,156. In 1935 the estimated membership was 12,900, not all of whom are active shippers of milk.

Production of the Sanitary Milk Producers' members in 1931 was approximately 186,551,265 pounds of milk, and in 1935, the estimated production was 305,109,544 pounds. Sanitary Milk Producers claims to control approximately 70 percent of the milk shipped to St. Louis.

The association acts as the producer member's agent in disposing of his milk supply. The distributor is authorized to pay producers an agreed price for his milk and to make deductions of not to exceed 5 cents per hundredweight to cover the cost of the services performed by the association.[97] The annual income of the association is estimated to be between $75,000 and $80,000 a year.[98]

SECTION 17. MILK SETTLEMENT PLANS IN THE ST. LOUIS MARKET

Prior to October 1, 1930, a flat price was paid for milk in the St. Louis market. On that date the base surplus plan was inaugurated and an agreement was entered into by the Sanitary Milk Producers, Inc., and cooperating distributors. The largest milk distributing organization in the St. Louis area, however, did not cooperate with the Sanitary Milk Producers, Inc., until Federal market supervision began on November 25, 1933. The stated object of the base surplus payment plan was to stabilize production by rewarding the producers who produced milk in accordance with the consumer demand.

---

[97] The deductions made are 4 cents per hundredweight of milk, of which 3 cents are for the association and 1 cent is for the St. Louis Dairy Commission.

[98] The association, according to an official, performs the following services for its members:

(1) In regard to price: A study made by the association of prices paid for milk in the St. Louis area reveals that, since 1930 until the present time, the prices paid the dairy farmer have been substantially above the prices prevailing in the market prior to the organization of the Sanitary Milk Producers.

(2) Butterfat testing: Eight licensed and experienced butterfat testers visit the receiving plants of the buyers and regularly check on butterfat content of the members' milk. (Each month the member receives a card showing what his milk tested so that he can compare this with the distributor's test. The work of the check testers is supplemented by adjustments of various kinds and amounted in 1934 to a total of $35,163 returned to its members. These adjustments were made because of short weights, incorrect quota, clerical errors in checks, producers paid incorrect prices, base corrections, check-off deducted twice, milk refused, test corrections, quarantine adjustments, underpayments collected for producers, milk cans lost, and incorrect hauling charges deducted.)

(3) Quality improvement: The association believes that the consumers in St. Louis should receive milk of the highest quality, and therefore cooperates in every move that will improve the quality of its producers' milk.

(4) Control of surplus: The association realizes the difficulty of solving this problem locally, but it has attempted to impress its producers with the importance of the problem and to demonstrate by means of educational information the influence of surplus on the price they will receive for milk.

(5) Credit rating for buyers: The association furnishes credit ratings on all buyers for the purpose of keeping its members informed as to the ability of various buyers to pay for their milk.

(6) Market information: The members are kept informed as to market conditions so that they may plan production intelligently. This is done through meetings of the 120 local units, through the association monthly magazine, and through a weekly news release sent to representative local newspapers in the St. Louis milkshed.

(7) Hauling milk: Before the development of the association, hauling was usually controlled by the buyers of milk and the charges were set by the truckers themselves. The association now aids its members in any dispute that arises with milk haulers.

(8) Advertising: Sanitary Milk Producers has contributed in the past and stands ready to continue contributions to any worthy educational program which will increase the sale of its members' milk.

Under this plan three classes of milk sales were established. Class I sales were to consist of bottled and bulk wholesale and retail whole milk sales, class II sales of a quantity of milk up to or equal to the quantity to be paid for or accounted for as class I, and class III sales of all milk in excess of classes I and II. The class I price was determined by price conference agreements between the cooperative and the distributors working with the cooperative.

It was undoubtedly difficult for the cooperative to adopt the base and surplus plan at this time because of the fact that the largest distributor in the city continued to purchase milk at flat prices and from producers not members of the cooperative. This distributor also had a higher percentage of bottled fluid milk sales than did either of the two next largest distributors.

The plan therefore which applied only to producer members of the Sanitary Milk Producers, Inc., and cooperating distributors, at first included only approximately 67 percent of the milk produced for the St. Louis market. It was continued until July 1, 1933, when it was abandoned.[99]

On November 25, 1933, license no. 18 of the Agricultural Adjustment Administration became effective in the St. Louis shed and, since that date, the St. Louis market has been under Federal control. Under the license the milk of all the producers in the market came under the base-surplus and classified price plan and the license also provided for a market equalization pool. The classifications embodied in the November 25, 1933, marketing agreement and license were as follows:

Class I. That amount of milk (commercial milk and special grades of milk) which the distributor sells for consumption as whole milk through retail and wholesale channels excepting milk sold or used for manufacturing purposes.

Class II. An amount of milk up to or equal to the amount to be paid or accounted for as class I.

Class III. The balance of the milk purchased by the distributor.

Under Federal license no. 35 for St. Louis, effective March 2, 1934, class II milk was redefined as "all milk used by distributors to produce cream for sale or distribution by distributors as cream for ultimate consumption in the St. Louis sales area." On August 14, 1934, this provision in respect to class II was further amended to include also milk used for evaporated and condensed milk, flavored drinks, creamed buttermilk, and creamed cottage cheese.

One of the reasons which prompted the inclusion of milk used in the several manufactured dairy products listed in class II was the presence of large evaporated milk plants [1] in and near the St. Louis fluid-milk production area which made it necessary that the St. Louis distributors pay a price at least equivalent to the price paid for milk at such condenseries, in order to secure milk for use in manufacturing the other products listed under class II.

It appears that there was considerable dissatisfaction with the base surplus plan of paying producers under the license so that in

[99] Some of the results of the operations of this base surplus plan from October 1930 to June 1933, inclusive, are given later in this section.

[1] Reports of the St. Louis market administrator show that during the period March 1934–August 1935, a total of 669,472,726 pounds of milk were reported to his office as having been purchased from producers. Of this total, 300,000,664 pounds, or 44.8 percent, was reported as class I; 82,426,831 pounds, or 12.3 percent, as class II; and 281,574,119 pounds, or 42.1 percent, as class III. There were reported separately, as milk used in evaported milk, 5,470,712 pounds, which was 0.8 percent of the total.

the summer of 1934 a vote of the producers was taken to ascertain their attitude concerning this form of payment plan. The vote showed that approximately two-thirds were opposed to the base and surplus plan and that about one-third favored it. One authority stated that the principal reason the majority of the producers wished the plan discontinued was that the St. Louis shed is a surplus area and, from the producers' viewpoint, it appeared they were receiving too little for their milk due to the high proportion of surplus and the lower price paid therefor. Another informant said the producers did not understand the plan.

As a result of the vote of the producers and of a study made of conditions in the market, the Federal license was amended November 16, 1934, and the method of paying producers was changed from a base surplus to a straight pooling or weighted average basis.

From the time of the first Federal license in St. Louis, November 25, 1933, to March 4, 1935, the St. Louis distributors had operated under an interdealer or market pool. Under this distributor equalization plan distributors with a high proportion of class I sales were supposed to make payments to the market administrator and the distributors with a low proportion of class I sales were to receive payments from the market administrator, so as to put all distributors on an equal footing insofar as their cost of milk, f. o. b. St. Louis, was concerned.

Payments were made from the equalization funds to those distributors who had money due while some distributors who should have made remittances to the fund failed to make their payments. It was reported that in one 10-month period there was due from distributors to this equalization fund over $30,000. The deficit caused by the nonpayment of this sum had to be met by reduced prices to the producers which resulted in the producers paying the equalization fund losses.

This market pool was reported to have been generally unsatisfactory to both producers and distributors. Distributors who did cooperate were dissatisfied because those distributors who did not pay into the pool had a competitive advantage in the market.[2]

On March 4, 1935, under an amendment to license no. 35, the interdealer or market pool was displaced by the individual distributor pool. This amendment was made at the instance of a majority of the distributors and the organized producers in the area.

Under the individual-dealer pool, prices paid by different distributors are not uniform, as one distributor will have a higher percentage of class I sales with a resulting lower percentage of classes II and III sales than does another. As an illustration, in January 1936, the blended price paid by different distributors in the St. Louis market ranged from about $1.70 per hundredweight to over $2 per hundredweight.

It was claimed by an official of the Sanitary Milk Producers, Inc., that under the individual dealer pool plan approximately 80 percent of the members of the Sanitary Milk Producers, Inc., received practically the same prices for their milk and that about 20 percent, who

[2] Among smaller distributors in St. Louis during the early days of the Federal licenses there was much misunderstanding as to the purpose of the dealer pool. They found it difficult to understand why they had to pay into the pool (because of their high proportion of class I sales) while some of the larger companies received payments from the pool (because of their low proportion of class I sales).

ship to distributors who handle a greater or a lesser quantity of surplus, received more or less than prices received by the 80 percent.

It is contended that under the present plan it is difficult to induce a distributor to purchase extra milk or take on extra shippers due to the fact that he wishes to keep his individual pool price as high as possible.

After the amendment of March 4, 1935, under which individual-distributor pools were established, the market administrator continued for a time to publish a weighted average market price for each month. Some of the distributors whose utilization was such as to make their blended price higher than the average attempted to pay their producers the weighted average price published by the administrator. This practice was stopped when the market administrator discontinued publishing the average price for each month. However, the blended price paid by each distributor has been published, and each individual producer can thus determine the amount of money he should receive for his milk after his hauling costs are deducted. If a distributor does not pay his producers the blended price as published by the market administrator, the producers can ask for an investigation. The Federal market administrator of St. Louis is of the opinion that the producers generally are satisfied with the individual-distributor pool in spite of what may seem to be an injustice to those producers who receive lower prices than other producers.

Practical application of the base and surplus plan from October 1930 to July 1933.—For each of the months of October, November, and December 1930, milk settlements under the plan devised by the Sanitary Milk Producers, Inc., and the distributors cooperating with them were calculated as follows: The total milk receipts of all the cooperating distributors were added together and the total pounds of their fluid milk sales (less the quantity sold for manufacturing purposes) were added together. The total pounds of fluid milk sales were then divided by the total receipts to determine the percent of receipts sold as fluid milk. The quantity of milk delivered by each producer was then multiplied by this percentage figure to determine the quantity of milk to be paid for as basic milk. A quantity equal to this basic quantity of milk was to be paid for as no. 1 surplus;[3] all the remaining milk delivered was paid for as no. 2 surplus.[4] The three prices paid were for 3.5 percent milk f. o. b. country station, with 4 cents per hundredweight added or subtracted for each tenth of 1 percent of the butterfat test above or below 3.5 percent.

In 1931 each producer was allotted a monthly base, which was calculated as follows: The total quantity of fluid-milk sales (less the quantity sold for manufacturing purposes) of all the distributors buying from the cooperative, for the last 6 months of 1930, was divided by the total quantity of milk receipts of these distributors for the same period to determine the percentage of total milk receipts sold as fluid milk. This figure was 46 percent. The total of each producer's deliveries for the last 6 months of 1930 was divided by six; the quotient multiplied

[3] Called class II under the plan, as heretofore described in this section.
[4] Called class III under the plan, as heretofore described in this section.

by 46 percent resulted in what was known as the 1930 monthly base, which was used for 1931 milk settlements.

For each of the 12 months of the year 1931 each distributor calculated his individual milk settlements with producers as follows: The quantity of fluid-milk sales (less the quantity sold for manufacturing purposes) was divided by the total quantity of allotted producers' 1930 bases to determine the percent of allotted 1930 bases sold as fluid milk. The percentage figure multiplied by each producer's allotted 1930 base gave the quantity of milk to be paid for as base milk; an equal quantity of each producer's milk delivered was paid for as no. 1 surplus; the balance of the milk delivered was paid for as no. 2 surplus.

The producer base used in milk settlements during the year 1932 was an average of 1930 and 1931 bases and was calculated as follows: The total fluid-milk sales of July, August, September, and November 1931 were divided by total milk receipts for the respective months to determine the percentage of receipts sold as fluid milk; the figure was 50 percent. The average milk deliveries of each producer for July, August, September, and November 1931 were multiplied by 50 percent to determine what was known as the producer's 1931 base. Each producer's 1931 base was added to his 1930 base, and the sum divided by two was the base figure to be used for the year 1932.

The distributors used the same method of calculating monthly milk settlements during 1932 as they used during 1931.

The producer base used in milk settlements beginning in January 1933 was the average of 1930, 1931, and 1932 bases. The 1932 base was calculated from the records of July, August, September, and November 1932.

During the first 6 months of 1933 dealers continued to follow the method used in 1931 and 1932 in calculating monthly milk settlements.

In theory, at least, it would seem that the method used by the distributors in calculating the quantity of milk to be paid for at the base would result in their paying the base price for quantities of milk equal to the fluid-milk sales (less the quantities sold for manufacturing purposes). Two St. Louis distributors, however, sold substantial quantities of *bottled fluid milk* on retail and wholesale routes, which were paid for at surplus milk prices, during the year 1932 and the first 6 months of 1933. In this period two distributors sold 2,392,369 quarts of milk, paid for at surplus milk prices, as *bottled fluid milk*, and this quantity was over 6 percent of their total bottled-milk sales for the entire period. Furthermore, it should be noted in particular that the quantity mentioned is only *bottled milk*, and it is reasonable to suppose that the quantity of fluid milk sold, but paid for at class III prices, would be still larger if the calculation was made on bulk milk as well as on bottled milk.

A detailed examination of the milk settlements of the two St. Louis distributors for the month of June 1933 revealed 270,833 quarts of milk paid for at surplus prices and sold as *bottled fluid milk*.[5] These sales of surplus milk in bottles were possible because, first, the total allotted base used in calculating the percent of indi-

[5] Bottled fluid-milk sales included such sales on retail and wholesale routes only.

vidual producer bases to be paid for at the class I price included the allotted bases of producers who did not ship milk that month; second, some of the producers that did ship milk did not ship the quantity allowed by their respective bases.

The percent of the individual producer base to be paid for at the class I price was calculated by dividing the total fluid-milk sales (less milk sold for manufacturing purposes) by total allotted producer bases. Obviously, the greater the total allotted base figure divided into the fluid-milk sales, the smaller would be the percentage figure to be applied to each producer's base. The practice of the two distributors in including the allotted bases of producers who did not ship that month as well as the allotted bases of the producers who did ship meant that they included unshipped producer bases equivalent to 14.8 percent of the total allotted base of all their producers used in the calculations. The percent of bases for which producers were to receive class I price from these two distributors was 81.8. If the total allotted base of only those producers who had actually shipped had been used by these two distributors in their calculation, the percent for which they would have paid the class I price would have been 96 percent. The use of the 81.8-percent figure, therefore, obviously resulted in the two distributors paying the class I price for less milk than was sold as fluid milk.

Producers who shipped less than the amount of their respective bases received the class I price for the quantity of milk shipped. The presence of such producers operated to limit the quantity of milk to be paid for at the class I price. Producers who shipped more than their respective bases received the class I price for a quantity equal to their respective bases, and also the class II price for a quantity of milk equal to the quantity of their respective bases, and the surplus price for the excess. Many producers shipped quantities of milk in excess of their respective class I bases but not in excess of twice their class I base quantities and received the class II price for the quantities shipped in excess of class I bases, but not in excess of twice the class I bases. The presence of producers who shipped less than twice their respective bases also operated to limit the quantity of milk to be paid for at the class II price.[6] The distributors thus obtained milk purchased at class III prices from those producers that shipped in excess of twice their respective bases available for class I or class II sales. This problem of distributor advantage from the presence of producers who shipped less than their respective bases under certain milk-settlement plans was also encountered in Cincinnati and Philadelphia.[7]

Officials of the two St. Louis milk-distributing companies discussed in this section were asked to explain how they computed the total bases used in figuring their class I settlements with producers. The explanations given by these two distributors were substantially the same. Each of the companies determined the base for each producer shipping to it. In figuring their monthly settlements with producers, each of these distributors totaled the bases

[6] This group of producers included those that shipped less than their bases, as well as those who shipped more than their bases but less than twice their bases.

[7] See sec. 14 for discussion of the Cincinnati situation and H. Doc. No. 387, Report of the Federal Trade Commission on the Sale and Distribution of Milk and Milk Products, issued in January 1936, pp. 14 to 17, as to the Philadelphia situation, in which the problem is discussed in more detail.

of all the producers to whom they had allotted bases, regardless of whether or not all these producers had shipped milk during the month in question.[8] An official of one of the two distributing companies said: "It has always been understood between the producers and ourselves that the total allotted bases of all producers, whether shipping or not, would be used when comparing the total months' fluid-milk sales to arrive at the percent of allotted base to be used in paying each individual producer." The other distributor made the same contention. The first-mentioned distributor also quoted a clause in his company's agreement with the Sanitary Milk Producers association to prove his contention, and the clause in question provided that the company was to total the bases of all producers.

The wording of the agreement between the cooperative and the distributors is such that the two distributing companies were apparently within their rights in their interpretation of the method of computing total bases for milk-settlement purposes. An official of the cooperative stated that because all producers did not produce their base quota, some of the distributors in St. Louis were enabled to use surplus milk in their class I sales. This practice was one reason, according to this cooperative official, for changing from a base-surplus plan to a blended-price plan of paying producers.

SECTION 18. POSSIBLE EFFECTS OF RELATIONSHIP BETWEEN CLASS AND BLENDED PRICES

The possible importance of the relationship between the producer price of class I milk to the prices for surplus milk and the consequent blended price was indicated in the Commission's report on the sale and distribution of milk and milk products submitted to Congress December 31, 1935.[9] In the present report these relations are presented for Baltimore, St. Louis, and Boston for the year 1934. All attempts to obtain the basic data necessary to compute the relationships for the Cincinnati market met with failure.[10]

Certain price relationships are shown in the following tabulation for 1934 for Baltimore, St. Louis, and Boston:

	Per quart, 1934		
	Baltimore	St. Louis	Boston
Excess of class I price over blended price	$0.0078	$0.0111	$0.0158
Excess of blended price over class II price	.0067	.006	.0237
Excess of blended price over class III price	.0187	.0108	(1)

[1] No class III milk in Boston plan.

The excess of the class I price over the blended price was greatest in the case of Boston, 1.58 cents per quart, and was smallest for Bal-

[8] According to information given to the Commission, many producers in the St. Louis milkshed were frequently in and out of the St. Louis market because of the opportunity which frequently arose of selling their milk to condenseries at prices practically as favorable, if not as favorable, as those they would have received had they shipped to St. Louis.

[9] H. Doc. No. 387, 74th Cong., 2d sess., pp. 37–39.

[10] It is only when some central organization in a market, such as a cooperative, keeps the necessary records that the data needed for the purpose at hand can be obtained. In the case of St. Louis the information for only the 2 years could be obtained.

timore, 0.78 cent per quart, with St. Louis occupying an intermediate position with 1.11 cents per quart. Boston also showed the largest excess of the blended price over the class II price, 2.37 cents per quart, while Baltimore was 0.67 cent per quart, and St. Louis 0.6 cent per quart.

The significance of these figures lies in the fact that they may be closely related to conditions in the three milksheds. Baltimore, with close relationships between class and blended prices, is a market which was more stable than either of the other two in 1934. On the other hand, conditions in the Boston market and milkshed in 1934 were far from stable, and a great deal more dissatisfaction existed there among producers and distributors than was found in Baltimore. It is well within the bounds of possibility that the relationships between class and blended prices in the Boston milkshed have had much to do with the unstable conditions found there. With an excess of the class I price over the blended price of 1.58 cents per quart in 1934, the opportunity for flat-price buyers to operate profitably was far greater than the opportunity afforded by the narrower relationship found in Baltimore, 0.78 cent per quart. This wide spread in the Boston milkshed also constitutes an incentive for producers to distribute their own milk and is especially attractive to the cooperative groups in the far reaches of the milkshed. The 2.37 excess of the blended price over the class II price in the Boston market in 1934 also, perhaps, contributed to the demoralization of that market. It meant, in effect, that the fluid market was open to cooperatives and independent milk plants throughout the area which, no doubt, found that this large excess was a source of considerable profit to them. In other words, it was more profitable for these milk plants to buy milk in the vicinity of their plants at manufacturing prices and ship it to the Boston market to be sold at a price which was over 2¼ cents per quart more than the manufacturing price.

What has been said must not be taken to mean that, merely because price relationships between class and blended prices in any market are narrow, a stable condition will naturally follow. A narrow spread, however, may well be an important factor in preserving market stability, although not by any means the only factor necessary to that end.

SECTION 19. QUANTITIES OF MILK DELIVERED DAILY BY PRODUCERS

There is little doubt but that many of those concerned with the problems of the fluid-milk industry have given little attention to the quantities of milk delivered by individual producers. Nevertheless, this is an important item in the operations of a milk-distributing business. The details of handling the milk from each producer must be kept separately each day of the year. Not only must the weight of each lot be recorded but samples are also taken and saved for the regular butterfat test and a record made of each detail of every delivery.

The number of quarts per producer delivered each day to milk distributors averaged, in 1935, for Baltimore 75 quarts, for Boston 72 quarts, for Cincinnati 50 quarts, and for St. Louis 44 quarts. The usual milk can in which producers deliver milk to distributors contains 40 quarts. In the Baltimore area, therefore, the average delivery per producer was nearly two cans per day, while for St. Louis the average was only slightly more than one can per day.

It is to be regretted that time did not permit an analysis of the deliveries of producers for all markets such as the following tabulation of the deliveries by producers to one St. Louis distributor in June 1933 [11], distributed according to the number of quarts per day delivered:

Daily deliveries (quarts)	Producers in each group	Percent of total	Cumulative percentages
0–10	77	3.08	
11–20	328	13.11	16.19
21–30	502	20.06	36.25
31–40	444	17.74	53.99
41–50	355	14.19	68.18
51–60	282	11.27	79.45
61–70	167	6.67	86.12
71–80	101	4.04	90.16
81–90	64	2.56	92.72
91–100	51	2.04	94.76
101–110	27	1.08	95.84
111–120	25	1.00	96.84
121–130	20	.80	97.64
131–140	13	.52	98.16
141–150	14	.56	98.72
Over 150	32	1.28	100.00
Total	2,502	100.00	

About 54 percent of the milk delivered to this distributor came from producers delivering from 31 to 40 quarts per day or less than one can. Over 90 percent came from producers delivering less than two cans per day.

That milk producing is a side line for most producers supplying the requirements of large distributors is further indicated by the following tabulation which shows the number and proportion of producers receiving different sums per month for their milk, as paid by one St. Louis distributor, for June 1933:

Amount paid	Number of producers	Percent of total	Cumulative percentage
0–$10	214	8.55	
$10.01–$20	823	32.89	41.44
$20.01–$30	674	26.94	68.38
$30.01–$40	353	15.71	84.09
$40.01–$50	177	7.07	91.16
$50.01–$60	96	3.84	95.00
$60.01–$70	44	1.76	96.76
$70.01–$80	29	1.16	97.92
$80.01–$90	20	.80	98.72
$90.01–$100	16	.64	99.36
Over $100	16	.64	100.00
Total	2,502	100.00	

Less than 10 percent of the producers selling milk to this distributor received more than $50 per month for their milk. Over 41 percent received less than $20 per month each, and more than 8 percent were paid $10 or less. In contrast are the few producers, 16 in number,

[11] The record of this company was obtained for June 1933, in connection with another phase of the investigation.

and less than 1 percent of the total, who received milk checks of over $100 per month.

It is difficult to think of the farmers producing these small quantities of milk as dairy farmers. It would seem, rather, that milk is a side line to most of those supplying milk to St. Louis.

The chief significance of this discussion is that it serves to show how little is the bargaining power of the average milk producer. Also, it emphasizes the need for a strong cooperative to protect the interests of these small producers. And, it might be said, the statistics indicate that many of the difficulties of the cooperatives may be due to the necessity of gathering together large numbers of producers in order to gain control of a supply adequate to insure strength in bargaining with distributors.

Costs of inspection of farms producing milk are, of course, greatly increased by the multitude of small producers. Also the prospects of any control authority satisfying a substantial proportion of producers in attempting to allocate bases, or to set prices, or to perform any service designed to benefit the entire group of producers, cannot be an easy task when so many producers are involved, a large proportion of whom produce milk as a side line.

Chapter III. Distributor Margins and Factors Affecting Them

Section 1. Gross Margins by Classes of Milk

Explanation of terms and methods of computation.—The gross profit margins of milk distributors are presented in this report for the month of October 1935 by classes of milk and milk products sold. See the next section for a discussion of a number of practices affecting the gross profit margins of milk distributors.

Fluid milk includes sales of milk in bottles and in bulk at retail and wholesale, excluding milk sold for manufacturing purposes and special grades of milk purchased in bottles. Fluid cream includes cream sold in bottles and in bulk at retail and wholesale, after deducting cream sold for manufacturing purposes. "Other classes" of milk include special grades purchased in bottles, fluid milk and fluid cream sold for manufacturing purposes, and other milk products such as buttermilk, chocolate milk, butter, cheese, ice cream, ice cream mix, and condensed and powdered milk products. Nonmilk products sold, such as orange drink, eggs, etc., are eliminated from the gross profit margin calculation.

In the selection of the month of October as the period for which to present gross margins, the Commission was guided by the generally expressed opinion that this was a representative month in the milk industry. Constant changes in market conditions, however, prohibit the assumption that such data are representative of conditions for a longer period, and lack of time and funds prevented the Commission from procuring gross margins per unit on an annual basis.

For slightly over 2 months, including October 1935, the price of milk on retail routes in the city of St. Louis, Mo., was 10 cents per quart. The price in effect for the months preceding and following this period was, at times 11, and more generally, 12 cents per quart. These consumer prices bore no relation to changes in the class I price received by producers, which equalled $2 per hundredweight for milk testing 3.5-percent butterfat content, during January, February, and the first 4 days of March, and $2.25 per hundredweight for the remainder of the year 1935. The October gross margin per quart on fluid milk for this market, therefore, will be lower to a marked degree than that existing during the greater part of the year.

In view of the foregoing, it is important to emphasize again the fact that all data presented herein purport to disclose only the conditions in existence for a particular period—namely, the month of October 1935.

Regulations within particular markets governing settlement plans with producers were used as the basis for computing purchase costs by classes of milk.

In the case of the Baltimore market the dealers paid 23 cents per gallon for all milk of 4-percent butterfat content used in their business. In actual settlements with producers, who are members of the cooperative organization, payments are made on a class-price plan. An adjustment is then computed between the actual amount paid under the class prices and the amount which the producers, as a whole, would have received from a flat price of 23 cents per gallon. The amount of this adjustment represents the dealers' payment to, or from, the producers' cooperative organization. Nonmembers of the cooperative receive a flat price for all milk delivered.[12]

Apparently, resale prices of fluid cream in this marketing area are sufficiently high to compensate the dealer for the comparatively high cost of milk to be used in the sale of fluid cream. Gross margins for the Baltimore market have been computed by using the 23 cents per gallon as the basis of purchase costs for all classes. The spread per quart on fluid milk will be slightly increased and fluid cream spread per quart of milk equivalent will be greatly decreased, therefore, as compared with that which would be shown if purchase costs were based on a class-price plan as in the other markets discussed.

Settlement plans in St. Louis, Cincinnati, and Boston are based on utilization of milk by classes, and purchase costs are, therefore, calculated from class prices. The Boston market[13] regulations specify only two classes—fluid milk and all other milk products. In determining purchase costs of fluid cream, all milk purchased from producers in excess of fluid-milk requirements was considered utilized in the sale of fluid cream. Cream purchased from other dealers supplied the additional quantity necessary to satisfy the fluid-cream sales volume.

Purchase costs for all products delivered at the city processing plants are based on the f. o. b. prices at these plants. In the case of companies operating country receiving stations the purchase costs of the materials delivered to these stations are based on the delivered prices at the station, increased by the actual hauling costs incurred

[12] The number of these nonmember producers included in this study is small and the quantity of milk supplied by them is insignificant.

[13] The discussion throughout this section in respect to Boston is based on fluid milk sales in the Boston market while fluid cream and "other classes of milk" also cover sales of the Boston distributor in neighboring cities. The distributors had to separate their sales of fluid milk for the purpose of reporting to the Boston market administrator but were not required to separate other sales.

in transporting the products to the city processing plants. This method of determining costs is used in order to obtain, for all markets, gross margins on milk products sold, reflecting the amount obtained by the dealers to cover profits and operating expenses, including all receiving costs.

Purchase costs for milk sold as fluid milk and milk sold as fluid cream are governed by the pounds of butterfat sold in the respective classes. For example, it is apparent that a company purchasing a volume of milk equal in quarts to the volume of milk sold, but of a higher butterfat content per quart than that of the milk sold, has purchased an excess quantity of butterfat that must have been utilized in some other of the milk products sold. The cost of this excess quantity of butterfat is not included in the cost of the fluid milk sold but is a part of the cost of other milk products sold. Conversely, a company purchasing milk equal in volume to, but of a lower butterfat content than that of the milk sold has added a quantity of butterfat to the milk sold, the cost of which additional butterfat is included in the costs of such fluid milk sales.

For "other classes" of milk, purchase costs are subdivided into two classifications: (1) Milk products, embracing milk purchased for manufacture into products other than fluid milk and cream as well as manufactured or partly manufactured milk materials, and (2) nonmilk products such as sugar, salt, flavorings, etc., used in the manufacture of milk products. The purchase cost of the manufactured and partly manufactured materials includes values in excess of the raw milk, such values having been added by costs of manufacturing. To the extent of these additional values the distributors' purchase cost per quart of milk equivalent is in excess of the prices realized by the producers for that part of their milk that is bought by the distributors for manufacturing purposes.

All inventory changes and the costs of materials represented by mechanical losses are included in the cost of "other classes" of milk. Obviously mechanical losses occur in all classes. However, market regulations in three of the cities included in this study [14] provide for the payment for a quantity of milk in the higher classes equal to the actual sales in the respective classes. This results in the milk losses involved in handling being paid for in the lowest class, instead of in the class in which they actually occur.

The gross spread was apportioned between nonmilk products and milk products on the basis of the relation of the purchase value of each of the total purchases. This was done in order that any increases in value due to the addition of a product having no milk equivalent would not be reflected in the spread per quart on milk products.

Unit margins by classes of milk.—The following table presents the gross spread in cents per quart of milk and milk equivalent by classes of milk for the month of October 1935.[15]

[14] Boston, Cincinnati, and St. Louis.

[15] Purchases, sales, and gross margins are presented in total and per unit in a later section of this report with a detailed discussion of the factors affecting the margins in each of the four markets covered by this inquiry.

TABLE 1.—*Unit margins by classes of milk, Baltimore, Cincinnati, St. Louis, and Boston, October 1935*

Class of milk	1 Baltimore company (cents per quart)	4 Cincinnati companies (cents per quart)	3 St. Louis companies (cents per quart)	1 Boston company (cents per quart)
Fluid milk	5.21	5.90	(1)	5.13
Fluid cream	3.54	4.32	2.68	2.58
Other	5.03	2.64	2.44	.80
Average	5.02	4.28	3.41	3.35

[1] The gross margin on fluid milk was 4.34 cents per quart for the 3 St. Louis companies. This narrow spread resulted from the low price per quart of milk on retail routes prevailing in that market during October. The figures are not shown in the table in order to prevent its use without the necessary explanation for what is, in fact, a gross margin below that which normally would be found. The average, of course, is also affected.

For the four markets, the one Baltimore company had the highest average margin per quart of milk and milk equivalent on all milk products sold. This was owing chiefly to a margin per quart of milk equivalent on products other than fluid milk and fluid cream greatly in excess of that enjoyed in any of the other three cities. Also, gross spreads per quart of milk and milk equivalent on fluid milk and fluid cream were relatively high.

The four Cincinnati distributors had an average gross margin on all milk products equal to $0.0428 per quart of milk and milk equivalent, or over seven-tenths of a cent per quart less than the Baltimore company. The spreads per quart of milk and milk equivalent on fluid milk and fluid cream for the Cincinnati companies were the highest of the four markets covered. The spread per quart of milk equivalent on other products sold, however, although in excess of St. Louis and Boston, equaled only slightly more than 50 percent of the corresponding figure for the Baltimore company.

The gross margin per quart for all milk products sold by three St. Louis companies was $0.0341 for the month of October 1935. This is only about 80 percent of the corresponding margin for the four Cincinnati companies and not quite 68 percent of the Baltimore spread on all milk products. The reasons for these differences are the abnormally low spread per quart on fluid milk in St. Louis, due to the low retail price there in October 1935, as previously explained, and relatively small margins on fluid cream and other products.

One Boston company had an average spread of $0.0335 per quart of milk and milk equivalent on all milk products sold. This was the lowest of any market included herein and reflects the exceedingly narrow margin on products other than fluid milk and cream as well as a lower spread per quart of milk equivalent on fluid cream than existed in any of the three other cities.

Purchases, sales, and margins by classes of milk.—In the following pages, tables are presented which show the purchases, sales, and gross spread both in total and per quart for the following companies for the month of October 1935: One Baltimore company, four Cincinnati companies, three St. Louis companies, and two Boston companies.

TABLE 2. *Gross profit margin by classes of products sold, 1 Baltimore company, October 1935*

Class of milk	Quarts of milk or milk equivalent sold	Purchases			
		Nonmilk products (amount)	Milk products		Total purchases (amount)
			Amount	Per quart	
Fluid milk	4,253,628		$224,599.32	$0.0528	$224,599.32
Fluid cream	540,595		28,544.41	.0528	28,544.41
Other	593,231	$1,866.30	[1] 33,980.65	[1] .0573	35,846.95
Total and average	5,387,454	1,866.30	287,124.38	.0533	288,990.68

Class of milk	Sales		Gross spread			
	Amount	Per quart	Nonmilk products (amount)	Milk products		Total amount
				Amount	Per quart	
Fluid milk	$446,260.78	$0.1049		$221,661.46	$0.0521	$221,661.46
Fluid cream	47,660.54	.0882		19,116.13	.0354	19,116.13
Other	67,335.74		[2] $1,639.40	[2] 29,849.39	[2].0503	31,488.79
Total and average	561,257.06		1,639.40	270,626.98	.0502	272,266.38

[1] Includes some manufactured milk products.
[2] Gross spread apportioned between milk products and nonmilk products on the basis of the relation of the purchase value of each to total purchases.

The gross spread per quart on all milk products sold by one Baltimore company for the month of October 1935 was $0.0502 on a volume of business of 5,387,454 quarts of milk and milk equivalent. This relatively high gross spread on all milk products sold is due chiefly to the high proportion of milk and milk equivalent sold as fluid milk in comparison with the total milk and milk equivalent sold, fluid milk sales accounting for approximately 79 percent of both the total volume and total dollar sales. The purchase cost per quart of milk sold as fluid milk, as it will be noted, is equal to the purchase cost per quart of fluid milk sold as fluid cream ($0.0528). This is due to the fact that a flat price of 23 cents per gallon was paid for all milk purchased regardless of its utilization, as has been previously explained. The purchase cost per quart of milk used in "other classes" of milk products is in excess of that shown for the above-mentioned classes, due to the inclusion of mechanical losses, inventory change, and purchases of manufactured or partly manufactured milk products.

A large quantity of skim milk is retained by the Baltimore distributor from the separation of surplus milk into cream which cream is sold by the distributor as agent for the Maryland Cooperative Milk Producers, Inc. (See ch. II, sec. 7.) The realization on the sale of products manufactured from this skim milk, which bears no raw material purchase cost, is reflected by an increase in the gross spread on "other classes" of milk as well as the total gross spread on all milk products.

Freight and cartage deductions from producers in excess of actual hauling costs (see sec. 2), and deductions made to cover expenses incurred in operating country receiving stations are factors operating to lower the purchase cost in all classes and thereby increase the gross spread. Approximately 62 percent of the total milk purchased from producers was delivered at country receiving stations, during the month of October 1935 and, for this reason, the effect of these deductions is marked.

As the four Cincinnati companies do not operate any country receiving stations, all purchase costs are based on f. o. b. prices at city processing plants. As a result, no part of the amount of the gross spread is retained by the distributors in this market to cover costs of receiving milk at country plants. It is important that the lack of this expense be noted in a comparison of spreads between the Cincinnati market and markets in which a part of the milk is delivered in the country. A deduction from producers made by one distributor for hauling from one city processing plant to another is reflected in the purchase costs of all classes.[16]

TABLE 3.—*Gross profit margin by classes of products sold, 4 Cincinnati companies, October 1935*

Class of milk	Quarts of milk and milk equivalent sold	Purchases			
		Nonmilk products (amount)	Milk products		Total purchases (amount)
			Amount	Per quart	
Fluid milk	2,230,739		$98,665.43	$0.0442	$98,665.43
Fluid cream	506,548		18,548.65	.0366	18,548.65
Other	2,208,989	$4,367.53	[1] 73,666.44	[1] .0333	78,033.97
Total and average	4,946,276	4,367.53	190,880.52	.0386	195,248.05

Class of milk	Sales		Gross spread			
	Amount	Per quart	Nonmilk products (amount)	Milk products		Total amount
				Amount	Per quart	
Fluid milk	$230,209.99	$0.1032		$131,544.56	$0.0590	$131,544.56
Fluid cream	40,432.29	.0798		21,883.64	.0432	21,883.64
Other	140,100.82		[2] $3,790.75	[2] 58,276.10	[2].0264	62,066.85
Total and average	410,743.10		3,790.75	211,704.30	.0428	215,495.05

[1] Includes some manufactured milk products.
[2] Gross spread apportioned between milk products and nonmilk products on the basis of the relation of the purchase value of each to total purchases.

On all milk products sold by four companies distributing milk in Cincinnati the gross spread for October 1935 was $0.0428 per quart on a volume of business of 4,946,276 quarts of milk and milk equivalent. Of the total quarts of milk and milk equivalent sold by the Cincinnati companies fluid milk represented only 54 percent as compared with approximately 79 percent for the Baltimore company, indicating the smaller effect this class has in Cincinnati on the total spread on all milk products sold.

The manufacture and sale of ice cream by one Cincinnati company, however, makes the per quart spread on milk sold other than

[16] In this connection it should be pointed out that Cincinnati distributors sold substantial quantities of butterfat paid for at butterfat-differential prices in class I and class II. (See sec. 2.)

as fluid milk or fluid cream higher than it would be in the absence of such manufacturing, because of the relatively high gross margin on ice cream when reduced to a milk equivalent basis. The inclusion in the purchase cost for one company of a large quantity of butter transferred from a butter division, operated by that company, at a price below market, tends to decrease the purchase cost per quart of milk equivalent on "other classes" of milk.

Each of the three St. Louis milk dealers, for which data are presented in the report, received a part of his milk at country receiving stations. No deductions are made from producers to cover distributors' operating expenses at these stations. However, the amount of these expenses, as in other markets, must be defrayed out of the gross spread. Deductions from producers to cover freight and cartage from the country plants to city processing plants and actual costs incurred in such hauling are reflected in purchase costs of all classes of milk and milk products. The prices used as a basis for purchase costs per quart, therefore, differ from prices f. o. b. city processing plants only to the extent that actual hauling costs vary from deductions made to cover such hauling. (See sec. 2.)

The gross spread per quart on all milk products sold by three St. Louis milk companies was $0.0341 on a volume of business of 11,460,541 quarts of milk and milk equivalent—the resultant of spreads on fluid milk, fluid cream, and other milk products of $0.0434, $0.0268, and $0.0244 per quart of milk and milk equivalent, respectively.

TABLE 4.—*Gross profit margin by classes of products sold, 3 St. Louis companies, October 1935*

Class of milk	Quarts of milk or milk equivalent sold	Purchases			
		Nonmilk products (amount)	Milk products		Total purchases (amount)
			Amount	Per quart	
Fluid milk	5,637,471	----------	$282,963.98	$0.0502	$282,963.98
Fluid cream	1,914,867	----------	61,386.33	.0321	61,386.33
Other	3,908,203	$6,162.82	[1] 149,592.13	[2] .0383	155,754.95
Total and average	11,460,541	6,162.82	493,942.44	.0431	500,105.26

Class of milk	Sales		Gross spread			
	Amount	Per quart	Nonmilk products (amount)	Milk products		Total amount
				Amount	Per quart	
Fluid milk	$527,535.12	$0.0936	----------	$244,571.14	(3)	$244,571.14
Fluid cream	112,705.43	.0589	----------	51,319.10	$0.0268	51,319.10
Other	254,974.57	----------	[2] $4,049.33	[2] 95,170.29	[2] .0244	99,219.62
Total and average	895,215.12	----------	4,049.33	391,060.53	.0341	395,109.86

[1] The gross margin on fluid milk was $0.0434 per quart for the St. Louis companies. This narrow spread resulted from the low price per quart of milk on retail routes prevailing in that market during October. The figures are not shown in the table in order to prevent its use without the necessary explanation for what is, in fact, a gross margin below that which normally would be found.
[2] Includes some manufactured milk products.
[3] Gross spread apportioned between milk products and nonmilk products on the basis of the relation of the purchase value of each to total purchases.

Quarts of fluid milk sold by the three St. Louis distributors equaled approximately 49 percent of total quarts of milk and milk equivalent sold in all classes.

As in Cincinnati, and for the same reasons, the manufacture and sale of ice cream by one St. Louis distributor increases the gross spread on "other classes" of milk and on all milk products sold.

As usable data on all classes of milk could be obtained for only one Boston distributor, the gross spread per quart of milk and milk equivalent for all milk products sold is presented herein for that company separately. The gross margin on fluid milk is also presented for two companies combined:

TABLE 5.—*Gross profit margin by classes of products sold October 1935*

ONE BOSTON COMPANY

Class of milk	Quarts of milk and milk equivalent sold	Purchases			
		Nonmilk products (amount)	Milk products		Total purchases (amount)
			Amount	Per quart	
Fluid milk	3,697,390	----------	$225,031.81	$0.0609	$225,031.81
Fluid cream	2,109,198	----------	64,413.24	.0305	64,413.24
Other	1,941,645	$5,514.57	[1] 77,241.55	[1] .0398	82,756.12
Total and average	7,748,233	5,514.57	366,686.60	.0473	372,201.17

TWO BOSTON COMPANIES

Fluid milk	10,839,286	----------	$666,061.07	$0.0614	$666,061.07

ONE BOSTON COMPANY

Class of milk	Sales		Gross spread			
	Amount	Per quart	Nonmilk products (amount)	Milk products		Total amount
				Amount	Per quart	
Fluid milk	$414,907.35	$0.1122	----------	$189,875.54	$0.0513	$189,875.54
Fluid cream	118,818.88	.0563	----------	54,405.64	.0258	54,405.64
Other	99,362.79	----------	[2] $1,106.61	[2] 15,500.06	[2] .0080	16,606.67
Total and average	633,089.02	----------	1,106.61	259,781.24	0.0335	260,887.85

TWO BOSTON COMPANIES

Fluid milk	$1,221,070.62	$0.1127	----------	$555,009.55	$0.0512	$555,009.55

[1] Includes some manufactured products.
[2] Gross spread apportioned between milk products and nonmilk products on the basis of the relation of purchase value of each to total purchases.

Both Boston companies operate country receiving stations which handled in excess of 90 percent of the total milk purchased from producers. Deductions made from producers delivering milk at these country plants to cover operating expenses, as well as maintenance of cans to be used in transporting milk to the city, are reflected in purchase costs. The excess of deductions for freight and cartage over actual costs of hauling incurred by the distributors in trans-

porting materials to the city processing plants (see sec. 2), is another factor operating to depress the costs per quart shown below the f. o. b. city prices as is likewise a deduction from producers delivering milk direct to the city plant of $0.10 per hundredweight, or about $0.002 per quart, on milk sold as fluid milk.

The gross margin per quart on all milk products sold by one Boston milk dealer was $0.0335 on a total volume of business of 7,748,233 quarts of milk and milk equivalent. Spreads per quart on fluid milk, fluid cream, and other milk products were $0.0513, $0.0258, and $0.008, respectively, fluid milk accounting for almost 48 percent of the total volume in quarts of milk and milk equivalent sold. The narrowness of the spread on "other classes" of milk sold is accounted for by the high proportion of sales in this class of butter and ice cream mix—both products sold on a small gross margin. Sales of skim milk products, on which a high gross spread is realized, are very small for this Boston distributor.

Gross margins per unit on fluid cream.—Gross margins per quart of milk equivalent on fluid cream sold during the month of October 1935, as shown in tables 2 to 5, were $0.0354 for one Baltimore company, $0.0268 for three St. Louis companies, $0.0432 for four Cincinnati companies, and $0.0258 for one Boston company. These spreads resulted from sales realizations per quart of milk equivalent of $0.0882, $0.0589, $0.0798, and $0.0563 in the four cities and purchase costs of $0.0528, $0.0321, $0.0366, and $0.0305, respectively, per quart of milk and milk equivalent.

There is comparatively little difference between the respective spreads on fluid cream in Boston and St. Louis. The Boston company's spread reflects a slightly higher realization per quart on milk equivalent on sales and a correspondingly higher purchase cost than do the three St. Louis companies. For both markets purchase costs for this class of milk include, in addition to milk purchased from producers, the value of fluid cream obtained from other sources.

In the case of the Boston company, this outside cream accounts for approximately 45 percent of the total volume in quarts of milk equivalent sold as fluid cream. The purchase cost per quart is raised as a result of the necessity of buying outside cream to be used for fluid cream sales. This cream is obtained at a greater raw material cost per quart of milk equivalent than milk purchased from producers for utilization as fluid cream.

Each of the three St. Louis companies reported to the market administrator that a part of the outside cream purchased was used in the sale of fluid cream. In addition, one company reported frozen cream taken from storage as used for this purpose. (See sec. 2.) In St. Louis the effect of using outside cream for fluid cream sales is to decrease the purchase costs per quart of milk equivalent in the case of two St. Louis distributors and to increase it slightly for one St. Louis distributor.

The four Cincinnati distributors and the one Baltimore distributor obtained all fluid cream by separating milk purchased from producers. Sales values per quart of milk equivalent of fluid cream sold in Cincinnati and Baltimore is considerably in excess of that enjoyed in the St. Louis and Boston areas, due chiefly to higher sales prices for cream prevailing in the former markets in the month in question. The per-quart gross margins on fluid cream for four

Cincinnati distributors and one Baltimore distributor are relatively greater as a result of these price variations.

Gross margins on fluid milk sales.—The term "spread" or margin is commonly used in discussing the situation within a given market to illustrate the total difference between purchase costs and sales on which the milk dealer operates, this spread including both operating expenses and profit, if any. Largely because of the absence of detailed figures, the usual and customary method of presenting this spread is to calculate the difference between the retail quart price of milk sold on routes and the class I f. o. b. city price paid the producer. The use of this method, as pointed out in a previous report,[17] is open to serious criticism.

The wide variety of products handled by large milk distributors has been discussed in the presentation of gross margins on all milk products sold. A more detailed analysis of this subject is given in the following subsection which still further illustrates the fallacy of considering the spread on bottled milk sold on retail routes as representative of the margins on the milk business. In addition, the spread calculated on the basis of theoretical prices is, in itself, misleading because the actual spread enjoyed by the distributor is never in accordance with such prices, and the differences are, frequently, if not usually, too substantial to be ignored.

The following table presents the theoretical and actual spreads per quart on fluid milk for the month of October 1935 for the following companies: One Baltimore company, four Cincinnati companies, three St. Louis companies, and two Boston companies:

TABLE 6.—*Theoretical and actual gross margins per quart on fluid milk for Baltimore, Cincinnati, St. Louis, and Boston, October 1935*

City	Milk butterfat test	Theoretical				Actual spread per quart
		Purchase (f. o. b. city) per hundredweight	Price per quart	Retail sales price per quart (on routes)	Spread per quart (on routes)	
			Cents	*Cents*	*Cents*	*Cents*
Baltimore	4.0	$2.67	5.74	12	6.26	5.21
Cincinnati	4.0	2.40	5.16	12	6.84	5.90
St. Louis	3.5	2.25	4.84	10	5.16	(1)
Boston	3.7	3.02	6.49	12	5.51	5.12

[1] The gross margin on fluid milk was 4.34 cents per quart for the 3 St. Louis companies. This narrow spread resulted from the low price per quart of milk on retail routes prevailing in that market during October. The figures are now shown in the table in order to prevent its use without the necessary explanation for what is, in fact, a gross margin below that which normally would be found.

For one Baltimore company the theoretical spread per quart ($0.0626) was approximately 20 percent greater than the actual spread on fluid milk ($0.0521). The disparity between these figures is owing chiefly to a realization on sales, or average sales price, considerably below the retail price. Although approximately 89 percent of the total fluid milk sold is represented by retail milk in bottles, a large quantity of relief milk (in excess of 650,000 quarts during the month) is included therein. This relief milk, distributed at 7½ cents per quart, in addition to miscellaneous charity sales and milk

[17] See report of the Federal Trade Commission, H. Doc. No. 387, 74th Cong., 2d sess., on the Sale and Distribution of Milk and Milk Products, Dec. 31, 1935, p. 105.

sold at wholesale and in bulk, results in a sales realization of $0.1049 compared with the retail price of 12 cents per quart.

Purchase cost per quart is slightly below the f. o. b. city price due to deductions made from producers to cover country station operating expenses and hauling costs, as previously discussed.

It should be noted that the theoretical price is based on milk of 4-percent butterfat content. During October 1935 milk purchased from producers and sold to consumers averaged almost 4.2 percent, and the cost of this additional butterfat has an increasing effect over the base price for milk of 4-percent fat content.

The actual gross margin per quart on fluid milk sold by four companies distributing milk in Cincinnati was $0.0590 for the month of October. The theoretical spread of $0.0684 per quart was almost 16 percent in excess of the actual margin per quart. As in the case of the Baltimore distributor, this is a result of a lower realization on sales and a lower purchase cost than shown by the theoretical prices. Charity-milk sales at very low prices amounted to about 175,000 quarts and depressed the per-quart return, although lower purchase prices paid for milk sold to such organizations partially offsets the effect of these sales upon the spread. Of the total quarts of fluid milk sales, only about 63 percent were bottled, indicating that wholesale sales, at 10 cents per quart, and bulk sales, at approximately 8 cents per quart have a relatively large effect upon sales in this market.

In regard to purchase costs, the major factors operating to reduce the average price below the class I f. o. b. city price are: (1) The purchase of milk sold to charity institutions at a lower price to producers; (2) the inclusion of one company, located outside the marketing area, purchasing milk under a different settlement plan at lower prices; and (3) the deduction from producers for hauling from one processing plant to another. Milk purchased from producers during the month of October 1935 was of a butterfat content considerably in excess of the test upon which the class I price is based. As the companies purchased only enough butterfat to satisfy the requirements of the butterfat in the class I sales, they were able to obtain a quantity of fat at the differential price. The price paid for butterfat in excess of the base test is lower than the base price per pound, with the result that purchase costs per quart are reduced.

The spread shown for the St. Louis market was abnormally low during the month of October, as explained heretofore. The theoretical spread, based on the 10-cent per quart retail sales price prevailing during the period studied, was about 19 percent greater than actual spread per quart on fluid milk. The retail price of 10 cents per quart results in an actual sales realization on fluid milk of only $0.0936. A relatively low percentage of bottled retail sales to total milk sold, about 61 percent, is reflected in this figure.

Purchase cost per quart was $0.0018 in excess of the theoretical price of $0.0484. Butterfat content in excess of the 3.5-percent base, bonuses paid producers, and relatively high hauling costs incurred by dealers explain this increased unit purchase cost.

Hypothetical figures are presented below to illustrate the possible range in the St. Louis spread with retail prices of 11 and 12 cents per quart. These higher sales prices were in effect for the greater portion of the year 1935 with no corresponding increase in the producer price for class I milk. These hypothetical spreads are based on the assumption that the realization on sales will bear the same relation to retail prices as the actual sales realization for the month of October bore to the retail price of 10 cents per quart.

Retail sales, price per quart	Theoretical spread, per quart [1]	Hypothetical spread, per quart
Cents	*Cents*	*Cents*
11.00	6.16	5.28
12.00	7.16	6.21

[1] Purchase costs are based on a price of $2.25 for Class I milk delivered f. o. b. city processing plants which was the price for most of 1935. For the period Jan. 1 to Mar. 4, 1935, the Class I price, f. o. b. city processing plants, was $2 per cwt.

It is felt that these hypothetical spreads probably represent a closer approximation of margins enjoyed under retail prices of 11 and 12 cents per quart than would be obtained by the mere addition of 1 and 2 cents, respectively, to the actual margin per quart for October. These spreads are shown only to illustrate the possible range and must not be used as representative of actual conditions.

The actual gross margin per quart for two Boston companies was $0.0512 compared with the theoretical unit spread of $0.0551. There is less variance between these figures (theoretical spread 7.6 percent greater than actual) than in similar data for any other market covered by this study. Although sales of fluid milk in bottles on retail routes constitute only about 56 percent of the total quarts of fluid milk in Boston, the retail price of 12 cents per quart is not greatly in excess of the unit sales price actually realized of $0.1127 per quart when compared with Baltimore and Cincinnati. Relatively small quantities of milk sold in bulk and premium prices received from sales of special grades of milk contribute to the high realization on sales.

The purchase cost is reduced below the f. o. b. class I city price by deductions made from producers to cover receiving and can maintenance expenses as well as deductions for freight and cartage in excess of actual hauling costs.

The spreads per quart on fluid milk for the four markets covered in this report are, with the exception of Cincinnati, below those presented by the commission for the Philadelphia and Connecticut markets in the Federal Trade Commission report, House Document No. 387, Seventy-fourth Congress, second session, on sale and distribution of milk and milk products, December 31, 1935. The latter report disclosed (see pp. 104 and 105) actual gross margins of $0.05588 and $0.05323 on fluid milk sold in Philadelphia and Connecticut, respectively.

Analysis of total sales distributed by milk classes and products.—Further data showing the proportions of distributors' sales accounted for by the different classes of milk and milk products, and subdivisions thereof, are presented in the following table for Baltimore, Cincinnati, St. Louis, and Boston for the month of October 1935. This analysis is calculated on the basis of the percent of the number of quarts of milk and milk equivalent sold, by classes of milk, in bottles and in bulk, on retail and wholesale routes.

TABLE 7.—*Sales analysis for Baltimore, Cincinnati, St. Louis, and Boston distributors, October 1935* [1]

Class of milk	Baltimore		Cincinnati		St. Louis		Boston	
	Percent of quarts of milk and milk equivalent in all milk products sold	Percent of quarts of fluid milk sold and percent of quarts equivalent of fluid cream sold	Percent of quarts of milk and milk equivalent in all milk products sold	Percent of quarts of fluid milk sold and percent of quarts equivalent of fluid cream sold	Percent of quarts of milk and milk equivalent in all milk products sold	Percent of quarts of fluid milk sold and percent of quarts equivalent of fluid cream sold	Percent of quarts of fluid milk sold
Fluid milk:							
Bottled:							
Retail, quart bottles	60.593	75.744	27.479	69.929	(2)	(2)	(2)
Retail, other bottle sales	9.760	12.362	1.121	2.486	(2)	(2)	(2)
Total, retail bottled	70.353	89.106	28.600	63.415	29.878	60.740	55.419
Wholesale	1.362	1.726	8.480	18.804	15.661	31.887	35.392
Total, bottled	71.715	90.832	37.080	82.219	45.539	92.577	90.811
Bulk:							
Retail	1.467	1.858	148	329	104	212	
Wholesale	5.757	7.310	7.871	17.452	3.547	7.211	9.189
Total, bulk	7.239	9.178	8.019	17.781	3.651	7.423	9.189
Total, fluid milk	78.954	100.000	45.099	100.000	49.190	100.000	100.000
Fluid cream:							
Bottled:							
Retail	5.953	50.324	3.177	31.026	8.136	48.693	
Wholesale	.456	4.545	2.847	27.795	5.026	30.082	
Total, bottled	6.409	62.869	6.024	58.823	13.162	78.775	
Bulk:							
Retail	.790	7.871	.116	1.130	.078	.464	
Wholesale	2.836	28.260	4.101	40.047	3.469	20.761	
Total, bulk	3.626	36.131	4.217	41.177	3.547	21.225	
Total, fluid cream	10.035	100.000	10.241	100.000	16.709	100.000	
Total, fluid milk and fluid cream	88.989		55.340		65.899		
Other	11.011		44.660		34.101		
Total, all classes	100.000		100.000		100.000		

[1] Data were not available to segregate wholesale sales on retail routes. Such sales, however, are generally insignificant, although not in the case of the Baltimore market.
[2] No data available for break-down of quart-bottle retail and other bottle sales.

The percentage of quarts of fluid milk sold to total quarts of milk and milk equivalent of all milk products sold varied from a high of approximately 79 percent for the Baltimore company to a low of 45 percent for the Cincinnati companies. Fluid cream constituted 10 percent of total quarts of milk and milk equivalent sold for the Baltimore market, 10.2 percent for the Cincinnati market, and 16.7 percent for the St. Louis market. "Other classes" of milk ranged from about 44.7 percent of total quarts for Cincinnati to about 11 percent for Baltimore.

It is particularly significant to note that fluid milk in quart bottles on retail routes, upon which the theoretical spread calculation is based, represented about 60.6 percent of the total quarts of milk and milk equivalent of all milk products sold for the Baltimore market and only about 27.5 for the Cincinnati market. These data were not available for St. Louis and Boston.

There was a marked variation between distributors in the percentages of fluid milk and fluid cream sold in bottles and in bulk, on retail and wholesale routes. These differences in these percentages result in varying sales realizations per quart and thereby affect gross margins per quart.

Of the total quarts of fluid milk sold, bottled milk on retail routes comprised about 89 percent for the Baltimore market, slightly over 63 percent for Cincinnati, about 60.7 percent for St. Louis and about 55.4 percent for Boston. The Baltimore figure is approximately 61 percent in excess of that shown for the Boston market.

Bottled cream constituted over 63.8 percent of total quarts of milk equivalent of fluid cream sold by the Baltimore distributor, about 58.8 percent for the Cincinnati distributors and over 78.7 percent for the St. Louis companies.

The analysis of the fluid-milk class of sales is especially significant from the standpoint of sales income derived from the milk sold through the various channels. The sales income per quart from fluid-milk sales sold in bottles at wholesale and retail, and bulk sales at retail and wholesale combined, and total fluid milk for Cincinnati, Boston, and St. Louis for the month of October 1935 are shown by index numbers in the following tabulation (per quart income on total fluid milk being equal to 100).

	Cincinnati [2]	Boston [3]	St. Louis [4]
Fluid milk:			
Bottled:			
Retail	115.833	114.603	115.092
Wholesale	84.816	83.080	81.881
Total bottled	108.740	102.317	102.463
Total bulk [1]	59.583	77.062	72.768
Total fluid milk	100.000	100.000	100.000

[1] Dealers' records were not available to allocate bulk, retail, and wholesale sales in amounts.
[2] Four companies.
[3] 2 companies.
[4] 2 companies.

The total bottled-sales income for St. Louis and Boston were approximately the same, namely, 102.463 percent and 102.317 percent, while for Cincinnati it was 108.74 percent. Total bulk-sales

income varied considerably by cities; the income for Cincinnati was 59.583, for Boston 77.062, and for St. Louis 72.768 percent.

SECTION 2. FACTORS AFFECTING DISTRIBUTOR MARGINS

Country receiving station operating costs.—In the Boston, Baltimore, and St. Louis milksheds, country stations for receiving milk from producers are operated by some of the milk distributors serving the cities named. The Cincinnati distributors do not operate country receiving stations.

The primary function of the country receiving stations is to provide convenient facilities where producers may deliver their milk where it is received, weighed, sampled, and cooled before being shipped into the city. Some of the country stations also have facilities for processing milk.

There are certain advantages to producers patronizing country receiving stations which are not available to producers shipping their milk direct to city processing plants. Truck and train schedules do not have to be met, as the producer can haul his milk to the receiving station largely at his own convenience. The morning milk often need not be cooled before delivery and chances of losses from spoiling are lessened. The supply of cans needed is generally smaller for patrons of the country stations than for the producers who ship by truck or train.

The chief reasons for equipping some country receiving stations with processing facilities are to enable the owners to process the milk received in excess of their city requirements and save on freight costs, as well as gain any advantages which may exist in lower manufacturing costs in the country as compared with the costs in the city.[18] Because of the expense involved, however, the Commission could not make a study of the costs of operations of those country receiving stations which also do processing and they have been excluded from this study of country receiving station costs.

The volume of business done has a decided effect upon the unit costs of operating country stations and for that reason the results shown herein for the stations operated by the distributors in the three cities named above are shown by size groups. Table 8 presents, for 1935, the total expense, and the expense for specified items of cost, per hundredweight of milk, of operating country receiving stations owned by certain distributors, in the Boston, Baltimore, and St. Louis milksheds.

The average total station expense for the stations in the three sheds was lowest for the Baltimore stations, 11.071 cents per hundredweight, and highest for the St. Louis stations, 12.115 cents per hundredweight, with the Boston stations practically as high as St. Louis, 12.021 cents per hundredweight.

[18] See p. 30, Report of the Federal Trade Commission on Sale and Distribution of Milk and Milk Products, Jan. 8, 1936.

TABLE 8.—*Country receiving station operating costs per hundredweight of milk for 6 distributors in the Boston, Baltimore, and St. Louis markets for the year 1935*

Location and volume	Number of stations	Total receipts	Total station expense	Indirect charges	Total direct charges	Station wages
		Pounds	*Cents*	*Cents*	*Cents*	*Cents*
Boston market:						
1 to 3 million pounds	4	7,620,441	17.838	3.319	14.519	5.191
3 to 6 million pounds	2	8,166,082	18.549	3.207	15.342	5.882
6 to 9 million pounds	5	40,625,544	14.979	1.729	13.250	4.193
9 to 12 million pounds	3	29,431,942	13.779	2.061	11.718	4.296
12 to 15 million pounds	3	42,197,149	12.542	1.890	10.652	3.574
15 to 18 million pounds	4	67,666,643	9.009	1.804	7.205	2.542
18 to 21 million pounds	2	37,948,461	9.713	2.233	7.480	2.750
Total and average	23	233,656,262	12.021	2.006	10.015	3.473
Baltimore market:						
1 to 3 million pounds	2	4,466,256	16.255	----------	16.255	4.908
3 to 6 million pounds	2	6,332,855	16.878	----------	16.878	4.508
6 to 9 million pounds	5	37,098,017	10.731	----------	10.731	2.920
9 to 12 million pounds	2	18,799,978	8.553	----------	8.553	2.220
Total and average	11	66,697,136	11.071	----------	11.071	3.006
St. Louis market:						
1 to 3 million pounds	2	5,227,960	15.366	.697	14.669	8.467
3 to 6 million pounds	3	12,811,356	10.406	----------	10.406	10.073
6 to 23 million pounds	3	41,855,632	12.233	1.478	10.755	3.924
Total and average	8	59,894,948	12.155	1.093	11.022	5.636

Location and volume	Station supplies	Fuel, light, and power	Maintenance and repairs	Depreciation	Taxes	Insurance	General expense
	Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Boston market:							
1 to 3 million pounds	3.194	1.797	1.463	1.723	0.717	0.236	0.198
3 to 6 million pounds	1.820	2.089	1.052	2.805	.411	.227	1.056
6 to 9 million pounds	1.607	2.026	.499	1.689	.334	.197	2.705
9 to 12 million pounds	1.969	1.532	.904	1.250	.283	.050	1.404
12 to 15 million pounds	1.318	1.789	.600	1.485	.321	.046	1.519
15 to 18 million pounds	.586	1.343	.385	.908	.248	.107	1.086
18 to 21 million pounds	.984	1.379	.673	.867	.185	.054	.588
Total and average	1.266	1.613	.614	1.277	.292	.105	1.375
Baltimore market:							
1 to 3 million pounds	1.535	4.923	2.739	1.019	.328	.197	.606
3 to 6 million pounds	1.666	3.142	2.720	3.864	.557	.206	.215
6 to 9 million pounds	1.299	3.118	1.378	1.560	.075	.154	.227
9 to 12 million pounds	1.123	2.648	.830	1.415	.075	.124	.118
Total and average	1.301	3.109	1.442	1.702	.138	.153	.220
St. Louis market:							
1 to 3 million pounds	1.093	1.903	.646	.885	.103	.058	1.514
3 to 6 million pounds	----------	----------	----------	.274	.059	----------	----------
6 to 23 million pounds	1.882	.904	1.019	1.180	.295	.142	1.409
Total and average	1.410	.797	.769	.961	.227	.105	1.117

The tendency for total station expense per unit to decrease with the increase in volume of milk handled is clearly shown, especially in the case of Boston, although the largest size group in both the Boston and St. Louis areas had higher total expense than the immediately smaller size group. Other breaks in this tendency occur. the stations in the 3 to 6 million pounds per annum group for both Boston and Baltimore being higher than the 1 to 3 million pounds group. The total station expense for the St. Louis country stations in the 3 to 6 million pounds group, 10.406 cents per hundredweight

on the other hand, was substantially below that for the all-stations averages of each of the three of the markets, and still more below, of course, the total expense of the same size group for the Boston and Baltimore stations.

The high total expense of the Boston country stations in comparison with Baltimore and St. Louis is due more to the inclusion of indirect charges than to any other item of expense. For all the Boston stations indirect charges amounted to 2.006 cents per hundredweight, the range being from 1.729 for stations in the 6 to 9 million pounds group to 3.319 cents per hundredweight for the smallest size of stations. These indirect charges occur chiefly in the case of one of the Boston distributors and include substantial items for salaries of officials, a depreciation figure for closed stations, part of the salaries of field men, addressograph expense, and many other miscellaneous items which companies in the other milksheds did not as a rule charge to country-station expenses.[19] Other factors accounting for the low total cost of the intermediate size stations in the St. Louis shed are the absence of charges for station supplies, fuel, light and power, maintenance and repairs, insurance, and general expense.

Excluding indirect charges, it is seen that total direct charges per hundredweight for Boston stations (10.015 cents) are lower than those for Baltimore (11.071 cents) or St. Louis (11.022 cents).

Station wage expense is the largest single item of expense for both the St. Louis stations (5.636 cents per hundredweight) and the Boston stations (3.473 cents), but station wages for Baltimore (3.006 cents) are lower than the expense for fuel, light, and power shown for all stations in that shed (3.109 cents).

Country receiving station allowances and operating costs.—Distributor gross margins are directly affected by the relation between the country station allowance granted to distributors and the cost of operating such stations. These margins are increased to the extent that the allowances exceed costs, and are decreased to the extent that costs exceed the allowances.

Country stations, as previously stated, are operated by some of the distributors in Boston, Baltimore, and St. Louis, but not in Cincinnati. Distributors in Boston and Baltimore were allowed to make deductions to cover country-station operations, while there were no deductions permitted the St. Louis distributors.

The country-station allowance on class I milk in the Boston shed was 20 cents per hundredweight for the first 6½ months of 1935 and 23.25 cents for the balance of the year; there was no allowance on other than class I milk. In Baltimore the country-station allowance was 23.256 cents per hundredweight during the entire year on all milk handled through country stations.

Country stations may be divided into two general classes, namely, those that receive milk from producers and process all or part of it and those that do not do any processing. The first class may perform all the functions of the other in addition to processing. The second kind of country station is primarily a convenient place at

[19] It is probable that the best comparison of results for stations in the three sheds is on the basis of total direct charges rather than total station expense including indirect charges.

which to collect milk, cool it, and then ship it in wholesale quantities to city processing plants.

Appendix table 1 presents the basic data upon which the discussion in this section is based. The table covers the cost of operating country receiving stations in the Boston, Baltimore, and St. Louis markets and also shows the excess of the allowances granted to milk distributors who operate country stations over the cost of such operations for fluid milk, all other milk, and total milk.

In obtaining the cost of operating country receiving stations the Commission has included only the receiving cost of those stations which performed all the functions of receiving, manufacturing, and shipping milk. This was accomplished by dividing the total cost of operating those stations which were purely receiving and did no manufacturing, by the total quantity of milk handled through those stations. The resulting unit cost was then multiplied by the quantity of milk handled by those stations which also performed the manufacturing functions. Adding this last-obtained sum to the total cost of operating those stations which did no manufacturing gave the total estimated cost of the receiving function performed by all country stations.[20]

The cost per hundredweight for handling class I milk as compared with the cost for all other milk for Boston, for example, is different, and this is also the case in St. Louis. The reason for these differences is that the companies involved did not have the same numbers of stations, and the class I utilization for some of these stations of one or the other companies would be greatly different from each other. As explained elsewhere in this report the St. Louis distributors are supposed to consider nearby milk as used for their class I purposes in calculating their prices to be paid producers.

The following tabulation shows in cents per hundredweight the average cost of operating receiving stations, estimated as explained above, the amount of the allowances for country receiving station operations and the excess of the allowances over the average costs of operations for Boston, Baltimore, and St. Louis for 1935:

Market	Average cost of operating country receiving stations (cents per hundredweight)	Amount of allowance for country receiving station operations (cents per hundredweight)	Excess of allowance over average cost of operations (cents per hundredweight)
Class 1 milk:			
Boston	12.086	21.468	9.382
Baltimore	[1]	[1]	[1]
St. Louis	14.499	None	None
All other milk:			
Boston	11.843	None	None
Baltimore	[1]	[1]	[1]
St. Louis	12.007	None	None
All milk:			
Boston	11.987	12.689	.702
Baltimore	11.071	23.256	12.185
St. Louis	12.814	None	None

[1] No distinction between classes in Baltimore in respect to allowances.

[20] Where data on more than one company are combined, as was done in the Boston and St. Louis markets, the average country receiving-station unit costs are weighted, and, therefore, vary slightly from those shown in the preceding subsection.

All the milk received at country stations in the Baltimore milkshed is subject to a deduction of 23.256 cents per hundredweight regardless of its class. The cost of performing the receiving function at country stations for all milk received was 11.071 cents per hundredweight for Baltimore, leaving an excess of the allowance over cost of 12.185 cents per hundredweight. In contrast to the situation in Baltimore is that found in St. Louis where milk distributors operating country receiving stations are not given any allowance to cover the cost of operations. This means that the 12.814 cents per hundredweight cost of operating St. Louis receiving stations on all milk handled is not offset in any way by a specific allowance. In Boston the amount of the allowance on all milk handled was 12.689 cents per hundredweight which was less than three-fourths of a cent per hundredweight in excess of the cost of operating such stations.

Another feature of the contrast between the three markets should be mentioned. Because the Baltimore milk distributors are given an allowance for all milk handled through country receiving stations, the operations of such stations by the Baltimore distributors have been performed at a cost which is substantially below the amount of the allowance. In Boston where the allowance is made only for class I milk handled through country stations, it would appear that the cost of operating such stations resulted also in a substantial excess of the allowance over the costs of operations, when class I milk only is considered. But when all milk handled through Boston country stations is considered, the cost of operations are almost as great as the proration of the total amount allowed for all class I milk so handled divided by the total of all milk handled.

Local milk paid for at class III prices while outside cream purchases were reported used for class II purposes.—The St. Louis license provides an elaborate system for settling with producers for their milk. The general idea is that prices to producers in the St. Louis milkshed will be equalized, all producers receiving the same price less the freight for the zone in which the producer is located.

Two of the larger St. Louis milk distributors followed a practice when compiling their reports to the market administrator which resulted in substantial quantities of milk shipped into that market by producers within the milkshed being depressed into class III and, of course, being paid for at the class III price. These two distributors bought cream from various plants [21] and reported to the market administrator of the Agricultural Adjustment Administration that they had used this cream for class II purposes. The milk equivalent of the cream so reported forced an equal quantity of milk shipped in by producers into class III and which was paid for at class III prices. One of these two companies followed this practice for a period covering every month from March 1934 through December 1935, while the other company so reported cream during the months of March, October, November, and December of 1935. The quarts of milk equivalent involved in this reporting of cream for class II purposes, the total amount involved in the difference between the class II prices which should have been paid and the class III prices which were actually paid, and the average amount of the difference per producer are shown in the following tabulation:

[21] Some of this cream was bought from manufacturers of milk products, some from creameries, some from other milk distributors, etc., price being an important factor, of course.

Depressed return to producers

Milk equivalent of outside cream reported as used in class II sales (quarts)	12,992,513
Average number of producers [1]	6,634
Total difference between class II value and class III value of quantity involved	$96,770.56
Amount per quart (cents)	0.745
Average amount of loss per producer	$14.5871

[1] The average number of producers is the simple average of the number of producers shipping to the 2 distributors in the period covered by the tabulation.

The market administrator stated to an examiner of the Commission that he was aware that this practice was engaged in by the two companies in question, but that there was no provision in the license prohibiting the practice.

In calculating quantities of milk for which producers were to be paid the class II price the quantities of cream involved in this discussion which were reported as used for class II purposes were deducted from total class II sales. This may have been because the distributors felt that cream and not milk as such was involved and the St. Louis license provided that only milk used for class II purposes shall be used in calculating the class II price.[22]

The relation of the quantities of cream reported for class II sales by these two distributors, expressed in the terms of its milk equivalent, to the quantities of milk paid for at class III prices is shown in the following table for each month in which the practice was followed:

TABLE 9.—*Ratio of milk equivalent of outside cream reported as class II sales to quantities of milk paid for at class III prices*

Year and month	Company A (percent)	Company B (percent)	Year and month	Company A (percent)	Company B (percent)
1934—March	28.8200		1935—January	38.4344	
April	23.3603		February	38.4695	
May	15.2565		March	36.4766	21.7248
June	19.7980		April	32.1312	
July	22.5345		May	20.8873	
August	18.5342		June	22.9239	
September	22.2114		July	22.3988	
October	29.8661		August	26.2111	
November	34.0621		September	38.4243	
December	42.4804		October	67.4451	54.4026
			November	86.5097	67.5493
			December	60.0586	60.6564

As is shown in table 9, it was not necessary from the standpoint of available supply for the two companies to use this cream instead of milk for their class II purposes. In each month covered by the table the supply of milk available to these distributors from their regular milk producers in the shed was sufficient to take care of their

[22] The St. Louis amended license for milk effective Mar. 4, 1935, defines class II milk as follows: "Class II milk means all milk used by distributors to produce cream for consumption or use as cream, evaporated milk, condensed milk, flavored drinks, creamed buttermilk, and creamed cottage cheese, for sale or distribution by distributors in the sales area: *Provided:* That the milk from which only the skimmed milk is used in the production of the above products shall not be included as class II milk."

class I and class II sales and to furnish also substantial quantities available for class III purposes.

Use of uninspected cream for class II purposes.—The regulations of the board of health of the city of St. Louis require that all milk and cream used for fluid purposes be from inspected sources. It was found, however, that all of the cream from outside sources reported by two distributors to the market administrator as having been used for class II sales was from uninspected sources.[23] As appears from the following tabulation, one of the two St. Louis dealers in the 22 months between March 1934 and December 1935 reported substantial proportions of his class II sales as being made from cream from the outside and uninspected sources, the range in proportion being from 68 to 84 percent except for 1 month, when it was only 57.469 percent:

Percent of reported class II sales made from cream from outside sources [1]

	Distributor A	Distributor B		Distributor A	Distributor B
1934—March	68.712		1935—January	75.039	
April	69.152		February	75.697	
May	68.000		March	75.993	36.033
June	72.167		April	80.654	
July	72.709		May	80.169	
August	74.332		June	81.905	
September	75.963		July	83.019	
October	75.762		August	84.002	
November	72.632		September	81.574	
December	73.206		October	78.032	44.559
			November	57.469	85.044
			December	77.689	95.576

[1] All cream from outside sources involved in this tabulation was uninspected.

The other distributor covered by the tabulation reported the use of outside cream in only 4 months and the proportions of his total class II sales which came from outside sources amounted to slightly over 36 percent and about 44½ percent from March and October of 1935, but in November, 85 percent of his class II sales came from outside sources and in December 95 percent. As was the case with the first dealer, all of the outside cream used in the 4 months specified by the second dealer in his class II sales was from uninspected sources. In response to his request made in the interests of the protection of the public health, certain facts developed by the Commission's investigation with reference to this practice were furnished to the health commissioner of the city of St. Louis.

Use of frozen cream for class II purposes.—One large distributor in St. Louis purchased 86,855 pounds of butterfat, or the equivalent of 2,481,572 pounds of 3.5 percent milk, at class III prices and put it into storage during May, June, and August 1935. Later the dealer took this butterfat out of storage and reported 33,028 pounds of it as used for class II purposes. The effect of this was to depress into class III the milk equivalent of 33,028 pounds of butterfat delivered by the producers during the period of this sale, and was a violation of the terms of the Agricultural Adjustment Administration's marketing agreement and license. If this butterfat had

[23] The health department of the city of St. Louis advised the Commission that it had not approved the plants from which the cream was received.

not been depressed into class III, the producers shipping this distributor would have received $4,389.50 more for their product than they did receive. Of this loss to producers, $2,726.42 related to 3,972 producers who shipped during October 1935 and $1,663.08 to 3,876 producers for January 1935.[24] The average loss per producer, taking into account the variation in the number of producers in the 2 months, was $1.12. For those producers who shipped milk in both of the 2 months, the loss was $1.11½.

The procedure followed in handling this frozen cream, when preparing it for sale was to mix it with fresh milk and fresh cream. The mixture was used for different purposes, some of it for ice cream, some for butter, and for other class III products. An official of the company stated that he could not tell how much of the mixture had been used for class II purposes and how much for class III. By reporting all of the frozen cream in the 2 months as class II, however, the company assured itself of the maximum in the way of a low cost for its raw materials.

Adjustment of milk price differentials.—The St. Louis milk license as amended, effective March 4, 1935, provided for adjusting the cost of milk to distributors according to the location of the point at which the producers delivered their milk to the distributors.[25] Milk delivered at the city processing plants of the distributors was not subjected to any price differential because of distance, regardless of the class in which this milk was ultimately paid for. Milk delivered at country stations or other points at a distance from the distributors' city plants and ultimately paid for at class I or class II prices was subject to price differentials depending upon the zone in which it was delivered. It should be understood, of course, that the license defined the several zones and prescribed the deductions to be made for each zone. On milk delivered at country points and ultimately considered as used for class III purposes, a deduction of 5 cents per hundredweight was allowed regardless of the distance of the delivery point from the St. Louis sales area.

In theory it was believed that this system of zones and hauling deductions would aid in forcing distributors to pay for the milk delivered at their plants in the highest classes and also to pay for milk delivered at locations in the nearer zones in the highest classes, after the f. o. b. St. Louis milk had been accounted for. If a distributor received enough milk delivered at his plant to cover his class I and class II requirements, under the terms of the license, he would not be allowed to make any adjustments or deductions when reporting on his class I and class II milk. Furthermore, under these circum-

[24] The actual number of producers who shipped in January 1936 was not available, and the number used for that month is the number shipping in December 1935.

[25] The following excerpt from article V of the amended license covers the point: "SEC. 2. Adjustments in cost of milk to distributors.—The prices set forth in section 1 of this article shall be subject to adjustment in accordance with the following:

1. With respect to all class I and class II milk delivered to such distributor at locations outside the St. Louis sales area and within the following distances, airline, from the city hall in St. Louis there shall be deductions as follows: Within twenty (20) miles, sixteen (16) cents; more than twenty (20) miles but not in excess of thirty (30) miles, an additional two (2) cents; more than thirty (30) miles but not in excess of forty (40) miles, an additional two (2) cents; and within, but not exceeding each additional ten (10) miles, in excess of forty (40) miles, an additional one (1) cent.

2. With respect to all class III milk delivered to such distributor at locations outside the St. Louis sales area there shall be a deduction of five (5) cents per hundredweight.

3. Unless the prior written consent of the market administrator has been obtained for some other basis of adjustment, class I and class II milk shall be considered to have been delivered, in the order named, to a distributor at plants within or nearest to the sales area.

stances, all of the distributors' milk received at locations outside the St. Louis sales area would be subject only to the price adjustment or deduction of 5 cents per hundredweight. In other words, the license attempted to prevent the distributors from using f. o. b. milk and milk from nearby points for the higher classes and paying for it on the basis of the cost of all their milk receipts which would reduce the average cost because of the higher adjustments or deductions allowed on milk received from distant points.[26] One large St. Louis milk distributor asked the Agricultural Adjustment Administration's milk market administrator for permission to report milk used for class II sales as having been delivered at locations outside the St. Louis sales area. The market administrator appears to have granted this permission on four separate occasions, each time in response to a specific request. In granting permission, however, the administrator stated:

> This permission is given with further understanding that you will not buy cream outside of the market for class II purposes.[27]

The benefits the distributor expected to obtain from making these requests are, perhaps, best illustrated by the following tabulation which shows a hypothetical case where it is assumed that the milk delivered f. o. b. plant equals the distributor class I and class II sales requirements:

	Delivery point (as basis of payment)	Price per hundredweight f. o. b. distributor's plant	Deductions to be made in adjusting price	Net price to be paid by distributor
Milk settlement based upon provisions of license:				
Class I sales	F. o. b. distributor's plant	$2.25	None	$2.25
Class II sales	do	1.69	None	1.69
Class III sales	Location outside St. Louis sales area	1.30	$0.05	1.25
Milk settlement base upon request of distributors:				
Class I sales	F. o. b. distributor's plant	2.25	None	2.25
Class II sales	Location outside St. Louis sales area	1.69	[1] .25	1.44
Class III sales	F. o. b. distributor's plant	1.30	None	1.30

[1] This deduction varies with the distance from the city.

As will be seen from the foregoing tabulation, the reporting of class II sales as having originated outside the St. Louis sales area meant that the distributor would have paid $1.44 per hundredweight for the milk instead of $1.69 per hundredweight as provided in the terms of the license. This difference in favor of the distributor, or 25 cents per hundredweight, is offset in part by the greater cost of the distributor's class III milk, $1.30 per hundredweight, as compared with $1.25 per hundredweight. The net result, of course, would be to lessen the amount paid to producers by 20 cents per hundredweight on the quantity of milk depressed from class II into class III.

The market administrator stated to an examiner of the Commission that the milk distributor in question had said that if permission to report class II sales as outlined above was not granted he would bring in cream from outside areas. The market administrator further stated that he believed the farmers would lose less if he granted the permission to report class II sales as having been made from milk outside the sales areas, rather than permit outside cream to come in. He was further motivated by the fact that the milk license did not prohibit cream importations.

[26] See report Federal Trade Commission on sale and distribution of milk and milk products, January 1936, ch. 2, sec. 3.

[27] The company in question made its requests of the market administrator for settlements covering the months of April, May, June, and September, 1935.

The milk-distributing company under discussion adjusted its report of its use of class II milk during the months of April, May, June, July, August, September, October, and November of 1935. Except in the months of September and October, the quantities of milk delivered f. o. b. this distributor's city plant, and paid for at class III prices exceeded the quantities of milk delivered to this distributor at locations outside the St. Louis sales area, and which was reported as class II. To calculate the amount by which the returns to the producers were depressed during each of these 6 months, the quantities of milk delivered at locations outside the St. Louis sales area which were reported as class II milk are multiplied by the differences between the class II freight differentials actually used in paying for such milk and the differential that would have been applied had this milk been reported as class III. During September and October 1935 the quantities of milk delivered outside the St. Louis sales area and reported by this distributor as class II milk exceeded the quantities of milk delivered f. o. b. the distributor's city plant which were paid for at class III prices. To obtain the amount by which the returns to the producer were lower than they should have been for these 2 months, the quantities delivered f. o. b. city plant, and paid for at class III prices, were multiplied by the difference in freight differentials. The following tabulation shows for the 8 months the quantities of milk, the total amount, and the average amount per producer by which their returns were depressed by this practice:

Milk purchased at locations outside the St. Louis sales area and reported as class II instead of class III [1] (quarts)	4,854,275
Average number of producers	4,000
Depressed return to producers:	
Total amount	$24,694.86
Amount per quart (cents)	0.509
Amount per producer	$6.17

[1] For April, May, June, July, August, September, October, and November 1935.

As previously shown, the market administrator granted permission for this distributor to adjust his class II reports during 4 months (April, May, June, and September), but the distributor was unable to produce letters covering the other 4 months. It is possible that the distributor assumed that the permission he received for the above 4 months automatically gave him authority to use the same method for the other 4 months. Attention is directed to the previously quoted statements contained in the letters of the market administrator in respect to not buying "cream outside of the market for Class II purposes." As appears from the foregoing, two companies did report cream from outside the market as used for class II purposes, and the company under discussion is one of these, having followed the practice during October and November of 1935 despite the express condition under which permission to report milk for class II sales having been delivered at locations outside St. Louis was given.

Bulk fluid milk sales paid for at class III prices.—The St. Louis milk license, until amended effective March 4, 1935, did not specify explicitly that sales of bulk milk for fluid purposes were to be included in class I sales. It is believed, however, that it was the general understanding of all concerned in the regulation of the market by the license that such sales were to be reported in class I and they were so reported by many of the distributors. Possibly the dealers who were found to be deducting bulk milk sales from their class I sales when reporting to the market administrator, believed the omission of explicit specifications gave them the right to follow the practice.

One of the larger St. Louis distributors made deductions of bulk milk sales from his class I reports for, so he claimed, only that portion of such sales as had been used by the buyers thereof for manufacturing purposes according to affidavits of the buyers. The fact that this milk distributor believed it necessary to obtain affidavits is indicative of the statement previously made that, in general, the milk distributors of St. Louis believed that bulk milk used for class I purposes was to be paid for at the class I price. An official of a second large milk distributing company stated to an examiner of the Commission that he had learned of another company making deductions for bulk milk sales from his class I reports, and that he thereafter had followed the practice. In the case of this second distributor, however, all sales of bulk fluid milk for each month from August 1934 to February 1935, inclusive, were deducted from class I sales without the formality of obtaining affidavits as to the use made of the milk by the purchasers thereof. A third important St. Louis distributor deducted all of his bulk milk sales from his class I reports during the months of January and February 1935.

In deducting all or part of their bulk milk sales from their class I sales reports, these three distributors did not include such sales in their reports of class II sales, and, in consequence, such milk was paid for at class III prices.

The total number of quarts of bulk fluid milk sales paid for at class III prices by the three distributors, the total difference between the actual returns to producers and what they would have received had this milk been paid for at class I prices, and the average loss per producer are shown in the following tabulation:

Bulk fluid sales made from milk paid for at class III prices [1] (quarts)	2,241,093
Depressed returns to producers:	
Average number of producers [2]	7,970
Total difference between class I value and class III value of quantity involved	$45,793.76
Amount per quart (cents)	2.043
Amount of loss per producer	$5.75

[1] Period covered is August 1934, through February 1935, for one company, March 1934, through March 1935, for the second company, and January and February 1935, for the third company.

[2] The average number of producers is the simple average of the number of producers shipping to the three distributors in the period covered by the tabulation.

Inasmuch as one of the three distributors involved in this discussion had obtained affidavits from his customers to the effect that they had used a certain part of their bulk milk purchases for class III purposes, this distributor technically was within his rights in reporting

that part of his bulk milk sales in class III. The quantities involved, however, are included in the tabulation. Furthermore, as some of this milk sold by two of the distributors was probably used for manufacturing purposes the loss to producers was presumably somewhat less than that shown.

The three dealers, after the amended milk license went into effect on March 4, 1935, stopped deducting their bulk milk sales in total, or in part, from their class I reports. The provisions of the amended license covering this point are as follows:

ARTICLE IV. CLASSIFICATION OF MILK SALES AND USES

SECTION 1. *Primary sales and uses.*—Milk purchased or handled by distributors shall be classified according to its sale and use as follows:

1. Class I milk means all milk *sold or distributed* by distributors, as milk containing not less than one-half of one percent of butterfat, for *consumption or use* in the sales area.

* * * * * * *

SECTION 2. *Other sales and uses.*—Milk sold or distributed as milk or cream outside of the Sales Area or sold to other distributors or persons whether within or without said Sales Area shall be classified as follows:

1. Milk sold in bulk as milk or cream by a distributor who is also a producer to a distributor operating a bottling or processing plant shall be accounted for as Class III milk by such selling distributor, and if such buying distributor uses or sells such milk for other than Class III purposes such buying distributor shall account to the Market Administrator for the difference between the value of such milk or cream at the Class III price and the value of such milk or cream at the Class I or Class II price according to its usage; such difference in value shall be added to the total value computed pursuant to paragraph 1, section 1 of Article VIII.

2. Except as provided in paragraph 1 of this section, milk sold or distributed by a distributor as milk or cream (1) outside the Sales Area or (2) to another distributor or person whether within or without the Sales Areas, shall be accounted for by such selling distributor as Class I and Class II milk, respectively: *Provided*, That if such selling distributor, on or before the date fixed for filing reports pursuant to article VI, shall furnish to the Market Administrator *satisfactory proof* that such cream has been utilized for a purpose other than the sale or distribution for ultimate consumption or use as cream, then, and in that event such cream shall be classified in accordance with such other use.

Standardizing milk.—The two Boston distributors covered by the inquiry sold two or more brands or grades of milk, each having a particular butterfat-test standard. As the butterfat test of milk purchased varied, it was necessary to standardize the milk to obtain the butterfat standards desired for each of these grades or brands.[28] Beginning in June 1935, and continuing through February 1936, the two distributors considered 315,981 quarts of cream as used in the standardizing process, and then deducted the same number of quarts from their class I milk sales to determine the quantities of milk to be paid for at the class I price. The net effect of this practice was to force 315,981 quarts of producers' milk from class I into class II.[29] Milk returns to producers, therefore, were depressed by the difference between class I and class II prices. The depressed returns to producers were calculated for the months of June 1935, through February 1936, inclusive, and the tabulation

[28] Standardizing is the mixing together of milk or cream of different butterfat tests in order to secure milk or cream of a uniform, desired butterfat test.

[29] There were only two classes of milk in Boston, and milk not paid for at the class I price was paid for at the class II price. It is obvious that decreasing the quantity of milk to be paid for at the class I price, increased the quantity of milk to be paid for at the class II price.

below shows the total results of this practice for the 9 months, for the two distributors.

Total depressed return to producers	$13,184.71
Quarts of milk involved	315,981
Average number of producer shippers	6,726
Amounts per quart (cents)	4.17
Amount per producer	$1.96

The returns to the producers shipping to these two distributors during the 9 months were less by $13,184.71 than they would have been if the deduction of the added cream had not been made. This amounts to 4.17 cents per quart on the 315,981 quarts of milk depressed into class II by the addition of that quantity of cream to the class I milk, for standardizing purposes.

The Boston Milk Market Administrator opposed the practice of subtracting cream used for standardizing from total class I sales to determine the quantities of milk to be paid for at the class I price, as he interpreted the license to mean that distributors were to pay the class I price for a quantity of milk equal to the quantity of their class I sales. (See appendix E for provisions of the license on classification of milk). The administrator calculated an underpayment to producers from the practice, and the amount of the underpayment was paid to the administrator by the New England Dairies, Inc., the sales agency that represented the majority of the producers selling milk to the two distributors. Records of the two distributors, however, did not show payments to the New England Dairies, Inc., to reimburse the latter for the amount of the alleged underpayment.

The market administrator had made determined efforts to stop the practice under discussion, but the two distributors were continuing to make the deductions through January and February 1936. In other words prices to producers continued to be depressed and the operating margins of the distributors increased even after the market administrator had warned them to discontinue the practice.

Can-washing allowances.—Distributors in the Baltimore marketing area make a charge of 1 cent per can for washing all cans in which milk is delivered direct to the city processing plants.

While it is a fact that this can-washing service is rendered by the Baltimore distributors, it is equally true that it is almost universally rendered to producers by distributors in all markets. In no other case, however, were charges found to have been made for the service, nor is any charge made for this service to producers by one of the Baltimore distributors on milk delivered to the latter's country receiving stations, although then the distributor does the can washing at the country stations.

The only apparent basis for this deduction from producers is the fact that the Baltimore City Health Department regulations concerning the production and handling of milk and milk products shipped into Baltimore City for consumption as revised to June 6, 1930 (p. 7, sec. 43) state that:

> Within two hours after emptying milk, cans and lids or covers must be cleaned and sterilized by the dealer.

The total deductions for the month of October 1935 for can-washing service performed by two Baltimore distributors may be summarized as follows:

Can-washing deduction on milk shipped from farm direct to city plants	$1,389.36
Number of producers who shipped from farm direct to city plants	1,403
Quarts of milk shipped from farm direct to city plants	3,308,074
Deduction per producer	$0.99
Deduction per quart of milk	$0.00042

This subject may seem petty when it is shown that it amounts to slightly under $1 per month per producer, on the average. That, however, is beside the point. The fact is that distributors in general wash cans before returning them to the producers and the can-washing charge is the exception and not the rule. Adverting to the total amount deducted for can washing, $1,389.36, it may be noted that this sum represents nearly three-quarters of 1 percent of the total amount paid by the two distributors for direct shipped milk in October 1935.[30]

City receiving allowance in Boston.—Two Boston distributors, beginning July 16, 1935, with permission of the State milk control board deducted an allowance of 10 cents per hundredweight or 0.215 cent per quart from producers on all milk shipped from farms direct to city plants. Apparently this was to compensate the distributors for the receiving cost of handling this direct-shipped milk.

The total city receiving allowances for the two Boston distributors for the month of October 1935 amounted to $1,688.74.

The time and funds available for the inquiry did not permit the analysis of the actual costs of receiving milk shipped from farm direct to city plant. Insofar as general experience of many milk plant operators is concerned, there is reason to believe that the sum allowed, 10 cents per hundredweight, is probably in excess of the actual unit cost of the functions involved in receiving direct shipped milk at city plants.

Boston was the only one of the four cities covered in this part of the inquiry where distributors received such an allowance, unless the can-washing allowance in Baltimore on all milk received at the city plant direct from farms may be considered somewhat comparable to the Boston allowance.

Manufacturing chocolate "milk."—The subterfuges that have been used to avoid provisions of the milk-marketing license, in order to obtain milk from producers at a lower price, are well illustrated by the practice of one St. Louis distributor manufacturing his supply of so-called chocolate milk.

The amended Agricultural Adjustment Administration licenses in effect in the St. Louis milkshed in October 1935 defined class II milk as follows:

> Class II milk means all milk used by distributors to produce cream for consumption or use as cream, evaporated milk, condensed milk, flavored drinks, creamed buttermilk, and creamed cottage cheese, for sale or distribution by

[30] As the distributors pay the cooperative on a flat-price basis and on instructions from the latter pay producers on a classified-price basis, the amount actualy paid producers may be less than the total cost of milk. In some months the cooperative receives a sum equal to this difference and in some months the cooperative pays the distributors the amount of the difference. The settlements are on all milk, direct shipped or not, and consequently a more exact statement of the percentage cannot be made.

distributors in the Sales Area: *Provided*, that the milk from which only the skimmed milk is used in the production of the above products shall not be included as Class II milk.

"Flavored drinks" in the foregoing definition included "chocolate milk." The distributor referred to, however, did not report his chocolate milk sales as class II sales, claiming that his chocolate milk was not made from whole milk, although he advertised it as such to the public. The processing records of the company show that the chocolate milk was made from cream, sweetened and unsweetened condensed skim milk and butter. By this device the distributor was able to purchase a quantity of raw milk at the class III price which was equivalent to a large part of the quantity of the chocolate milk thus manufactured, instead of at the class II price as provided in the license. This, of course, resulted in a loss to the producers shipping milk to that distributor because this quantity of their milk was forced into class III. The Commission, because of the work involved, did not attempt to measure the extent of the practice of this distributor of manufacturing his so-called chocolate "milk." The results for October 1935, are, perhaps, typical. In that month the equivalent of 103,624 pounds of 3.5-percent butterfat milk were depressed into class III by this distributor as the result of manufacturing chocolate "milk." At the differences in prices for class II and class III milk then prevailing, the amount by which the returns to the producers shipping to this distributor were depressed was $352.33 for the month of October.

In addition to depressing the return to the producers the distributor was misleading the consumer as the company's advertising stressed the point that their chocolate milk was "made with whole milk."

Butterfat differentials.—Milk prices to producers are generally quoted as based on a fixed butterfat basis, for example, $2 per hundredweight, 4-percent butterfat-content milk. Milk shipped to distributors by producers varies in butterfat content, which necessitates milk-price adjustments. This is accomplished by applying what is known as a butterfat differential. If the milk price was based on 4-percent milk, such price would be adjusted upward by this differential, if the butterfat test of milk purchased is above 4 percent; the adjustment of price would be downward if the milk tested below 4 percent.

Assuming the price of milk to be $2 per hundredweight, for 4-percent-butterfat milk, the butterfat differential to be $0.04 per 0.1-percent-butterfat test, and the milk purchased contained 4 percent, 4.5 percent, and 3.5 percent butterfat, the price adjustments per hundredweight for milk of these butterfat contents are illustrated as follows:

100 pounds of 4-percent milk:
100 pounds at $2 per hundredweight=$2 for 100 pounds of 4-percent milk.
100 pounds of 4.5-percent milk:
4.5 percent−4 percent=0.5 percent butterfat in excess of 4 percent.
$0.04×0.5=$0.20 butterfat price adjustment.
$2+$0.20=$2.20 per hundredweight 4.5 milk.
100 pounds of 3.5-percent milk:
4 percent−3.5 percent=0.5 percent butterfat below 4 percent.
$0.04×0.5=$0.20 butterfat price adjustment.
$2−$0.20=$1.80 per hundredweight 3.5-percent milk.

No adjustment was made in the price for the 4-percent milk because it was of the same butterfat test as the test upon which the milk price was based. The price was increased $0.20 for the 4.5-percent milk to adjust for the 0.5 percent in excess of 4 percent at the rate of $0.04 per 0.1 percent. The price was decreased $0.20 for the 3.5-percent milk to adjust for the 0.5 percent below 4 percent at the rate of $0.04 per 0.1 percent.

If the average butterfat test of milk purchased is higher than the butterfat test basis of the milk price, it is to the advantage of the distributor to have the butterfat differential low, so that the price adjustment upward is as small as possible. If the butterfat test of milk purchased is lower than the butterfat test basis of the milk price, it would be to the advantage of the distributor to have the butterfat differential high, so that the price adjustment downward is as large as possible.

Milk prices are based upon various percentages of butterfat, such bases varying between different milk areas and even within the same milk areas from time to time. Butterfat differentials also vary. It is possible to relate the butterfat differential and the value of butterfat as established on the base butterfat test of milk by dividing the milk price by the base butterfat test and comparing the resulting price per pound of base milk butterfat with the butterfat differential. This is illustrated in the case of 4.5-percent-butterfat test milk, assuming the milk price to be $2 per hundredweight for 4-percent-butterfat milk and the butterfat differential to be $0.04 per 0.1 percent butterfat test, as follows:

$2÷4=$0.50: Value of butterfat per pound on basis of milk price.
1 percent at $0.04=$0.40: Value of butterfat per pound on basis of butterfat differential.

From the above it is seen that the excess butterfat over the 4-percent base is paid for at a lesser price per pound, 40 cents, than is paid for the base butterfat, 50 cents per pound.

Milk prices in fluid milk markets are generally quoted by classes of milk. Each class price divided by the butterfat test basis of the price results in the per pound butterfat value for each class. For example, the class I price divided by the butterfat test used as the price basis results in the value of class I butterfat, the class II price divided by the base butterfat test results in the value of class II butterfat, etc.

In fluid milk markets where both the test of class I milk purchased by distributors and the test of class I milk sold to consumers are in excess of the butterfat basis on which the class I price is based, butterfat is sold in class I milk for which the butterfat differential price was paid. Assuming the butterfat test of class I milk purchased and sold to be 4 percent and the butterfat test basis of the class I milk price to producers to be 3.5 percent, the proportion of butterfat sold in class I and paid for at the butterfat differential price is calculated as follows:

	Percent
Butterfat test of class I milk purchased and sold	4.0
Butterfat test basis of class I price	3.5
Butterfat sold in class I and paid for at butterfat differential price	.5

0.5÷4.0[1]=12.5 percent; butterfat sold in class I that was paid for at the butterfat differential price.

[1] Butterfat test of milk as purchased and as sold.

If the butterfat test of class I milk purchased was below the butterfat test of class I milk sold, but both the tests are, however, above the butterfat test basis prescribed in the class I milk price, the proportion of butterfat sold in class I that was paid for at the butterfat differential price is calculated as follows, assuming the butterfat tests to be 3.8 percent for milk purchased, 4 percent for milk sold, and 3.5 percent for the class I price:

	Percent
Butterfat test of class I milk purchased	3.8
Butterfat test basis of class I price	3.5
Butterfat sold in class I and paid for at butterfat differential price	.3
Butterfat test of class I milk sold	4.0
Deficiency between butterfat test of milk sold and milk purchased	.2

$0.3 \div 4$ [1] $= 7.5$ percent; butterfat sold in class I that was paid for at the butterfat differential.

$0.3 \div 3.8$ [2] $= 7.9$ percent; butterfat purchased as class I that was paid for at the butterfat differential.

[1] Butterfat test of milk as sold.
[2] Butterfat test of milk as purchased.

In the circumstances shown above only a part of the butterfat content of class I (4-percent) milk sold was obtained from the milk purchased, which tested 3.8 percent. The deficiency would be supplied by fortifying the milk with cream from some source.

If the butterfat test of class I milk purchased was 4 percent, the butterfat test of the milk sold, 3.8 percent, and the butterfat basis of the class I price was 3.5 percent, then the computation of the proportion of butterfat sold in class I that was paid for at the butterfat differential, accounts for only a part of the total butterfat purchased, as appears from the following:

	Percent
Butterfat test of class I milk purchased	4.0
Butterfat test of class I milk sold	3.8
Difference between butterfat tests of class I milk purchased and sold	.2
Butterfat test of class I milk sold	3.8
Butterfat test basis of class I price	3.5
Butterfat sold in class I and paid for at butterfat differential price	.3

$0.3 \div 3.8$ [1] $= 7.9$ percent; butterfat sold which was paid for at the butterfat differential price.

[1] Butterfat test of milk as sold.

In the above example, 7.9 percent of the butterfat sold in class I was paid for at the butterfat differential price. There is, however, an excess of butterfat purchased in class I over the butterfat sold in class I of 0.2 percent. Under these circumstances the milk, as purchased, would have to be standardized downward, possibly by the addition of skim, from the 4 percent butterfat class I milk purchased to the 3.8 percent class I milk sold. In other words, not only does the computation show 0.3 percent of the class I butterfat sold obtained at the butterfat differential price, but also 0.2 percent excess butterfat obtained at the butterfat differential price.

It was found that in 1935 butterfat paid for at the butterfat differential price was sold as class I in Boston, Baltimore, St. Louis, and Cincinnati. For the first three of these cities, this resulted from the fact that the butterfat tests of milk purchased and sold were above the butterfat test basis of the class I price. The Cincinnati distributors in this year determined the quantity of milk to be paid for at the class I price each month by converting class I sales to the butterfat test of milk purchased. As the butterfat test of milk purchased was higher than the butterfat test basis of the class I price, some of the butterfat in class I sales was paid for at the differential price.

The percentages of butterfat in fluid-milk sales (class I) that were paid for at butterfat differential prices in Boston and St. Louis, 5.37 percent and 3.40 percent, respectively, were higher than the corresponding percentage of 1.98 percent in Baltimore.[31] This situation resulted from the fact that there were greater disparities between the average butterfat tests of milk purchased and sold in excess of the butterfat test bases of class I prices in Boston and St. Louis than in Baltimore.

Cincinnati distributors paid the butterfat differential price for 7.08 percent of the butterfat in class I sales during the first 6 months and 3.80 percent during the last 6 months of the year 1935, the difference being due mainly to a change in the butterfat base for class I purchases.

The Cincinnati distributors converted their class I sales to the butterfat test of milk purchased to determine the quantity of milk to be paid for at the class I price. As the average butterfat tests of milk purchased for the first and second half of the year were higher than the 3.7 percent and 4.0 percent butterfat test bases of class I prices that prevailed during the respective periods, there was bound to be butterfat in class I sales that was paid for at the butterfat differential price.[32] It is interesting to note that if the

[31] The factors affecting the percent figures of Boston, Baltimore, and St. Louis are not comparable with the figures for Cincinnati, as the method of calculating the quantity of milk to be paid for at the class I price varies from the method used in the other three cities. Distributors in Boston, Baltimore, and St. Louis paid the class I price for a quantity of milk equal to the calculated quantity of class I sales. For example, if class I sales were calculated to be 100,000 quarts, the distributors would pay the class I price for 100,000 quarts. Cincinnati distributors, however, paid the class I price for the quantity of milk calculated by converting class I sales to the butterfat test of milk purchased. For example, if class I sales of 100,000 quarts converted to the test of milk purchased were 90,000 quarts, the distributors would pay the class I price for 90,000 quarts of milk.

[32] The percentages of butterfat in class I sales that would be paid for at the butterfat differential price at various butterfat tests of milk purchased is shown in the following tabulation for both a class I butterfat base of 3.7 and 4.0 percent:

Butterfat test of milk purchased	Percent of butterfat in class I sales paid for at butterfat differential price		Butterfat test of milk purchased	Percent of butterfat in class I sales paid for at butterfat differential price	
	3.7-percent basis of class I price	4.0-percent basis of class I price		3.7-percent basis of class I price	4.0-percent basis of class I price
	Percent	*Percent*		*Percent*	*Percent*
4.5 percent	17.78	11.11	4.0 percent	7.50	----------
4.4 percent	15.91	9.09	3.9 percent	5.13	----------
4.3 percent	13.95	6.98	3.8 percent	2.63	----------
4.2 percent	11.90	4.76	3.7 percent	----------	----------
4.1 percent	9.76	2.44			

Cincinnati distributors had converted their class I sales to 3.7 percent butterfat, as originally provided by the Ohio Milk Marketing Commission, they would not have had butterfat in class I sales paid for at the butterfat differential price. It is little wonder that the distributors opposed the provision. (See ch. II, sec. 14.)

The butterfat differentials per pound of butterfat in 1935 for Cincinnati were 30 and 40 cents,[33] for St. Louis 30 cents, for Baltimore 50 and 60 cents,[34] while for Boston the simple average for the year was 34½ cents.[35] The prices for Baltimore are worthy of consideration, especially when compared with the much lower prices shown for the other three cities. The differentials in Boston, St. Louis, and Cincinnati were approximately 50 percent of the respective per-pound class I prices for the basic quantities of butterfat, while the differentials in Baltimore were between 70 and 90 percent of the per-pound class I price for the basic quantities of butterfat. Baltimore had the lowest percent of butterfat in class I sales paid for at the butterfat differential price of any of the four cities.

The percent of butterfat in class I sales paid for at butterfat differential prices and the butterfat differential prices were important in their effect upon distributor operating margins and returns to producers. It would appear that distributor margins on class I milk have been substantially increased by the situation existing in Boston, St. Louis, and Cincinnati.

Butterfat differentials on other than class I milk.—St. Louis distributors were supposed to convert their class II sales to 3.5 percent, the butterfat test basis of the class II prices in that city. This would result in no butterfat in class II sales being paid for at the butterfat differential prices. In this section are shown some instances of improper calculations of class II sales by some of the St. Louis distributors. Milk not paid for at class I and class II prices was paid for at class III prices and subject to the butterfat differential of 3 cents per one-tenth of 1 percent above or below the base test, 3.5 percent. The class III prices, the base price per pound of butterfat, and the butterfat differential per pound paid during each of the months of 1935, for St. Louis, are set forth in the following tabulation:

[33] The differential varied with the price of 92 score butter in Chicago, equaling 30 cents when the price of butter was below 30 cents per pound and 40 cents when the price of butter per pound was 30 cents or over.

[34] Baltimore butterfat differentials vary for milk of different butterfat content. For example, milk testing 3 to 3.1 percent butterfat carried a differential of 6 cents for each $\frac{1}{10}$ of 1 percent below the base, while milk of 3.2 to 3.3 percent had a differential of 5 cents for each $\frac{1}{10}$ of 1 percent. These variations continue regularly with every fifth butterfat group carrying the 5 cents per $\frac{1}{10}$ of 1-percent price.

[35] Butterfat differential prices in Boston were fixed twice each month. The range for these prices for the year was from 25 to 45 cents per pound.

	Class III prices to producers		Butterfat differential per pound of butterfat
	Per hundredweight 3.5 percent milk (f. o. b. St. Louis)	Per pound of butterfat	
1935:			
January	$1.29	$0.369	$0.30
February	1.37	.391	.30
March	1.21	.346	.30
	1.23	.351	
April	1.30	.371	.30
May	1.06	.303	.30
June	.97	.277	.30
July	.98	.280	.30
August	1.00	.286	.30
September	1.04	.297	.30
October	1.10	.314	.30
November	1.25	.357	.30
December	1.31	.374	.30

The butterfat differential price per pound of butterfat was 30 cents throughout the year, while the class III base butterfat price per pound ranged from 27.7 cents in June to 39.1 cents in February. Class III butterfat prices were lower than the butterfat differential price during June, July, August, and September, and higher in the other 8 months.

In Boston all milk not paid for at the class I price was paid for at the class II price, as there were only two classes of milk in the market. The relation between the class II prices and butterfat differentials paid during each month of 1935 for Boston is illustrated in the following tabulation:

	Class II prices to producers		Butterfat differential per pound of butterfat	Excess of class II base price per pound of butterfat over butterfat differential price per pound
	Per hundredweight 3.7 percent milk f. o. b. Boston	Per pound of butterfat		
1935:				
January	$1.535	$0.415	$0.38	$0.035
February	1.590	.430	.39	.040
March	1.777	.480	.44	.040
April	1.746	.472	.43	.042
May	1.643	.444	.41	.034
June	1.724	.466	.43	.036
July	1.795	.485	.45	.035
August	1.612	.436	.40	.036
September	1.454	.393	.35	.043
October	1.264	.342	.30	.042
November	1.181	.319	.28	.039
December	1.127	.305	.27	.035
	1.144	.309	.27	.039
	1.106	.299	.26	.039
	1.135	.307	.27	.037
	1.103	.298	.26	.038
	1.103	.298	.26	.038
	1.073	.290	.25	.040
	1.129	.305	.26	.045
	1.310	.354	.31	.044
	1.520	.411	.37	.041
	1.707	.461	.42	.041
	1.704	.460	.42	.040
	1.593	.431	.39	.041

Boston class II butterfat prices, f. o. b. Boston, were in excess of the butterfat differential prices throughout the year. The range of excess was from 3.4 cents in March to 4.5 cents in October.

If the butterfat test of the milk coming into a market runs higher than the base butterfat test for class I milk, or of the base butterfat test for all milk in all classes, then the opportunity for distributors to obtain a comparatively cheap supply of butterfat is increased. In Boston, for example, the total pounds of butterfat paid for in class I were in excess of the pounds of butterfat sold in class I milk, and the quantity of this excess which was paid for at the butterfat differential price was available for other purposes. The effect of an accumulation of butterfat purchases at differential prices in all classes over a period of time is far from being an insignificant factor.

Cincinnati distributors [86] in 1935 converted their class II sales to the butterfat test of milk purchased, instead of to the butterfat basis of class II prices as was done in St. Louis. As the average butterfat tests of milk purchased in Cincinnati for the first 6-month and second 6-month periods were in excess of the butterfat bases of class II prices during the respective periods, some butterfat paid for at butterfat differential prices was sold in class II; 7.40 and 4.46 percent of the butterfat in the class II sales during the two respective 6-month periods were paid for at butterfat differential prices. This situation is especially significant in view of the relationship that existed between class II butterfat price and the butterfat differential price, as illustrated in the following tabulation:

Class II prices paid to producers

1935	Per hundredweight	Per pound of butterfat [1]	Butterfat differential per pound	Difference
January	$1.65	$0.446	$0.40	$0.046
February	1.65	.446	.40	.046
March	1.65	.446	.40	.046
April	1.65	.446	.40	.046
May	1.65	.446	.30	.146
June	1.65	.446	.30	.146
July	1.65	.412	.30	.112
August	1.65	.412	.30	.112
September	1.65	.412	.30	.112
October	1.65	.412	.30	.112
November	1.65	.412	.40	.012
December	1.65	.412	.40	.012

[1] The first 6 months the butterfat base was 3.7-percent butterfat while the last 6 months it was 4-percent.

Class II butterfat prices per pound were in excess of butterfat prices per pound throughout the year, the range being from 1.2 cents per pound in November and December to 14.6 cents in May and June. In 6 months out of the year the excess amounted to over 11 cents per pound.

From the foregoing discussion of butterfat differentials, it will be seen that they bear an important part in prices paid to producers. The Baltimore cooperative appears to have realized this, as is shown by the relatively high differential prices it has obtained for its members.

[86] The Cincinnati results cover the operations of all distributors reporting to the Ohio Milk Marketing Commission during the first 6 months of the year and all those reporting to the Cincinnati Sales Association, Inc., during the last 6 months.

Transportation of milk from farms and country stations to city plants.—Milk produced on farms may be shipped directly to the city plant, where it is pasteurized, bottled, and distributed to consumers, or it may be shipped from the farm to a country receiving station, where it is cooled and reshipped to the city plant. Milk producers are generally charged for the transportation of milk between farm and city plant, or farm and country receiving station if not hauled by themselves, and from the country station to the city plant.

The transportation charges are generally deducted by the distributors from the producers' gross milk return, and the transportation agencies are then paid by the distributors. If the distributor is engaged in milk transportation, he retains the hauling charges thus deducted from the producers.

The distributors' gross operating margins are affected to the extent that these hauling charges retained are in excess of, or less than, the transportation costs incurred. The relation of hauling charges and hauling costs on milk transported, by train and by truck, is illustrated for certain Boston, Baltimore, Cincinnati, and St. Louis distributors for October 1935 in the following tabulation:

	Baltimore (1 company)	Boston [1] (2 companies)	Cincinnati (4 companies)	St. Louis [2] (3 companies)
Amount of hauling charges in excess of cost	$10,866.45	[3] $23,013.47	$1,032.39	[4] $5,244.88
Number of quarts of milk hauled	4,654,969	9,528,073	3,252,967	3,995,656
Amount per quart of milk hauled—cents	0.233	[3] 0.263	0.032	[4] 0.131

[1] Boston sales area figures include class I milk for both dairies and class II for only 1 dairy, as class II hauling deduction and expenses were not available for the other dairy investigated. There were only 2 classes of milk in Boston during October 1935.

[2] The results shown by St. Louis dairies were affected by the fact that 2 companies operate processing plants some distance from the city and the expenses which are charged against the allowances for freight and hauling cover the delivery of finished products, bottled and packed from the processing plant to the city distributing plants, and also the cost of transporting the empty bottles and packages from the city to the processing plant.

[3] This amount also includes charges for can service of 3 cents per hundredweight and costs.

[4] Indicates excess of cost over amount deducted from producers.

During October 1935 distributors' gross margins per quart on distributor-hauled milk in Baltimore, Boston, and Cincinnati were increased by 0.233 cent, 0.263 cent, and 0.032 cent, respectively, while the gross margins in St. Louis were decreased by 0.131 cent as the result of milk-transportation operations.

The Baltimore area apparently was the only one of the four surveyed where the distributor was engaged in hauling milk from farm direct to city plant. Some of the milk received by this dealer was hauled by independent haulers, and some by the producers themselves.

In the Baltimore area the charges to producers on milk shipped from farm direct to city plant are set by the Public Service Commission of the State of Maryland. The Baltimore company examined deducted these transportation charges from the milk returns of the producers whose milk was thus transported. Independent

milk haulers received the amount of the charges deducted from the returns of producers whose milk they hauled, less a small bookkeeping charge for expense incurred by the distributor in keeping the records of the various haulers.

There were no country stations operated in the Cincinnati area during the period covered by the inquiry, and all milk shipped to city was hauled by independent truck operators or by producers themselves. Two of the Cincinnati distributors, however, operated processing plants some distance from the city of Cincinnati. These distributors were given an allowance on milk ostensibly to cover the cost of transporting such milk to Cincinnati for distribution. The cost of hauling includes also the cost of distributing some of the milk direct to consumers in Cincinnati as well as the cost of hauling to the city.

The matter of profit by milk distributors on transporting milk from the country to city processing plants is one which has been much discussed in the milk industry. Some hold that the distributors should not profit from transporting milk. On the other hand, the distributors claim that their charges to the producers are never in excess of the charges any producer would have to pay if he shipped his milk by public conveyance. Furthermore, the distributors say that by hauling milk in tank cars or by tank trucks, some advantages in freshness and purity are obtained which are in the interests of producers and that distributors are entitled to any savings in cost they can obtain as compared with public-conveyance transportation.

Inasmuch as milk distributors are not public utilities in the ordinary accepted sense, their argument has some force.

The cooperative associations might do well to give serious consideration to the possibilities of performing the transportation services for their members.

SECTION 3. DISTRIBUTOR REPORTS AND AUDITS

Distributor milk settlements with producers in the four cities covered by the inquiry have generally involved class prices at one time or another.[37] Such prices were usually set by agreement between distributors and producers or by State or Federal milk regulatory bodies. The presence of two or more class prices obviously makes possible gains to distributors who pay for milk without conformity with the prevailing agreement or regulation.

In order that producer cooperatives and regulatory agencies can be assured, as far as is possible by sound accounting methods, that distributors have paid producers according to the prevailing agreements or regulations, the commission considers it fundamental that the distributors' books be audited periodically. A thorough audit, assuming, of course, that adequate records are kept, would disclose the quantities of milk sold in each established sales class. To make sure that such quantity data have been determined in accordance with the prevailing agreements or regulations, it is necessary to reconcile the quantities sold with respective dollar sales that appear in the profit and loss statement for the period audited. Without the reconciliation of quantity and dollar sales, auditors cannot be

[37] Baltimore distributors paid class prices prior to Jan. 1, 1935, when a flat price of 23 cents per hundredweight was instituted. Boston, St. Louis, and Cincinnati distributors have paid class prices for several years.

certain that quantity sales by each class have been properly accounted for.

St. Louis and Boston operated under Agricultural Adjustment Administration agreements and licenses at the time of the inquiry and had been doing so since November 1933. The original agreements and licenses, and subsequent amendments for both cities, provided for distributor reports to the Secretary of Agriculture and authority for the latter to examine the distributors' books. (See appendix F for provisions of Boston and St. Louis agreements and licenses pertaining to distributor reports and examinations of books and records.) Distributors in both areas, however, refused to allow auditors of the local Agricultural Adjustment Administration milk-market administrators to reconcile quantities and dollar sales. One of the two milk-market administrators asked the distributors in his area to fill in a schedule calling for quantity and dollar sales by products, but the distributors refused to do so. Some distributors in this market reported monthly class I and class II sales in quantities only and refused to report class III sales even in quantities. The milk-market administrator in the city in which this occurred sought to audit the quantity class III sales of such distributors to determine if some milk actually sold in class I and class II had been actually paid for at class III prices, but the particular distributors refused to allow such an audit. Some distributors refused to allow the local milk-market administrator to audit a given month's sales until several months after the month in question had passed, with the result that a considerable amount of data were missing.

At the time of the inquiry in Baltimore, and dating back to January 1935, distributors paid a flat price of 23 cents per gallon for all milk purchased, and the local cooperative association made no audit of distributor sales. Audits were made, however, from time to time in past years, when classified prices were paid.

In 1919 the Maryland State Dairymen's Association and the dealers entered into a selling plan. At that time Dr. Clyde L. King was chosen arbitrator and continued as such until 1931. Under the "selling plan" the arbitrator received monthly reports from reporting dealers and had authority to make audits or examinations of reporting dealers' records as shown by paragraph 11 of the "selling plan" effective September 1, 1927, under which the dealers and association operated until 1931.[38] During Dr. King's

[38] Secs. 1, 2, and 11 of the Selling Plan of the Maryland State Dairymen's Association, effective Sept. 1, 1927, provided as follows:

"1. *Arbitration.*—The principles of arbitration are mutually acceptable to the Maryland State Dairymen's Association and to the Individual Dealers subscribing to this plan. Dr. Clyde L. King shall continue as arbitrator and he shall be guided as heretofore in the settlement of any disputes by the relations among and welfare of producers, dealers, and consumers.

"2. *Reports on which plan is based.*—The Individual Reporting Dealers will report purchases of Class I or basic and Class II or farm surplus milk, and various sales of milk and cream. It is upon the tabulated results of the total basic and total farm surplus purchases, and total sales of fluid milk and cream, month by month, from these dealers, that the following plan is based. Any additional dealers so reporting should be included in this tabulated summary.

"11. *Accountant to verify reports.*—A reporting dealer purchasing milk from the Maryland State Dairymen's Association shall agree to the employment of an arbitrator and to give him free access to all records of milk, both basic and farm surplus purchases, and of sales, through an accountant of his selection, and with the approval of the Association and the dealer concerned. This accountant is not to be interested in nor connected in any way with any dairy in the City, and must be a capable man, enjoying the confidence of the dealer and producers. The purpose of said accountant is to see that all dealers report on the same basis, to make itemized accounts of purchases from various sources, and to minimize, as far as possible, the chance of errors in reports from reporting dealers."

term as administrator, dealers reported to him and his auditors checked the records of dealers. How extensive the examinations made by Dr. King's auditors were, or exactly what reports he received from the distributors, the Maryland association could not state as all reports were retained by Dr. King.

In 1931 the association retained an accountant to examine the records of one company, but only for the purpose of examining into the amount claimed due to this company as manufacturing agent of the association. From the latter part of 1931 to 1933 the association also examined the records of some of the dealers pertaining to manufacturing surplus milk for the account of the cooperative. This was for the purpose of verifying the monthly reports by dealers and represents the extent of the examination of dealers records by the association.

In September 1933 the Agricultural Adjustment Administration issued its Marketing Agreement and License for Milk, Baltimore Area, Marketing Agreement Series, Agreement No. 9, License No. 6, by which an adjustment fund was established and an adjustment fund committee set up. On November 24, 1933, the adjustment fund committee sent a letter to dealers, advising them of the action of the committee in retaining a firm of accountants—

> to check over with you the total monthly milk purchases, sales, etc., of your dairy.

The committee cited as its authority for this step—

> the provisions as outlined in the license covering the Baltimore Milk Marketing Agreement (p. 25, exhibit B, sec. C, par. 2),

which reads in part as follows:

> The Committee shall have power, through duly authorized agents, to make such examination of the books and records of the distributors as may be reasonable and necessary for the due administration of the adjustment fund.

Examination of the accountants' reports as submitted to the committee in charge of the adjustment fund indicates that the checkups were merely *test checks.*[39]

An official of one distributing company advised an agent of the commission that the accountants went into detail, even to checking cash entries. The accountants' reports to the adjustment-fund committee, however, term the nature of their work as a *test check* and this description is borne out by an examination of the reports.

The test checks by the accountants continued until August 1934, when the market administrator started operations and continued for 3 or 4 months. During that period the same accounting firm was again retained. From October 1934 to December 31, 1934, no examinations were made. In January 1935 a new surplus-fund committee was formed and operated for 3 or 4 months. During these months another accounting firm was retained. No reports were filed by this firm, and it is not known whether any audits of the records of distributors were made by it. Since that time, about April 1935, however, no examinations have been made of dealers' records.

At the time of the inquiry in Baltimore the commission's examiners found it impossible completely to reconcile the quantity and

[39] "Test check" consisted of an effort to prove the accuracy of the dealers' reports as to purchases and sales in quantities for a given period, by verifying only selected portions of the records.

dollar sales of one milk-distributing company. An official of this company told agents of the commission that sales other than route sales were not recorded by commodities or units. Such other sales, including sales over the counter in the company's building, included milk, milk products and other items. In filing a report with the Market Administrator for August 1934 an adjustment of 600 gallons (estimated by the company to be class I milk, counter sales) was made to class I sales in an effort to report class I sales as accurately as possible. It is important to point out that an audit confined to the quantity sales of this company would not have revealed total fluid milk sales because some of the sales were not recorded by the company in quantities.

Prior to the Ohio Milk Marketing Commission, the K. I. O. Milk Producers Association, which was supposed to have represented producers in the Cincinnati market shipping through it, did not audit the distributors' records. The Ohio Milk Marketing Commission audited the distributors' records, but no attempt was made to reconcile quantity and dollar sales. The Ohio Commission discontinued operations July 1, 1935, and since that date, the Cincinnati Sales Association, Inc., has audited distributor records. The association's auditors checked the records of each distributor as to quantities sold in the various classes, and made intermittent spot checks into route drivers' daily records. The association, however, had no authority to reconcile distributor sales in quantities and dollars.

As previously stated the commission believes that the only effective audits of the records of milk distributors are those which include both quantities and dollar sales. That this view is not confined to the commission is shown by the following statements made to examiners of the commission:

A Governmental milk-regulatory official, in one of the four cities covered by the inquiry, stated that the audits made by his organization were of little value without quantity and dollar sales reconciliation. A regulatory official in another of the four cities reported that "distributor reports must be checked into financial records to be sure of accuracy." A representative of one cooperative association stated to examiners of the commission that:

> examinations of dealers' records, as conducted in the past, were of little if any value from the angle of verification of the records. However, a clause (in respect to right to verification) placed in the dealers' agreement, whether carried out or not, did have a material effect upon producers and consumers alike, in that they felt they were protected. It likewise reflects favorably on the dealer if it appears he is agreeable to an examination of his records.

Chapter IV. Profits From Operations

Section 1. Introductory Explanations

The various plans under which milk and milk products were purchased and sold by the dealers herein referred to have been explained, and the financial results of their operations are set forth in the sections which immediately follow.

Operating statements for the month of October 1935 are first presented in order to show how the dealers examined fared while operating within the gross margins permitted by the spreads referred to in the preceding chapter.

Similar statements for the years 1930, 1933, 1934, and 1935 are also given for the purpose of showing the corresponding results during a predepression year, insofar as the milk distributing business is concerned, and the last 3 years.

These statements cover only the operations of the so-called milk divisions of the dealers examined and do not include sales, expenses, and profits pertaining to their ice cream and butter divisions, condenseries, bakeries, stores, restaurants, and farms. That is, the results of such activities and also the revenues and expenses pertaining to investments outside the milk business have been excluded from these operating statements to the extent that they could be suitably segregated. Otherwise, they have been included, but these statements are substantially limited to the regular milk and cream business and a relatively small amount of other products.

Due to the limited time available, the other operations referred to were not investigated thoroughly.

Rates of return on investments are also given for the purpose of showing how profitable the business was with respect to the capital employed therein. No attempt has been made to establish a fair margin of profit or rate of return, but information is presented to show the relation of various expenses and profits to sales and the ratio of net earnings to investments. Returns on investments should not be confused with profits on sales.

The margin of profit on sales necessary to earn a fair return on investment depends largely upon the volume of sales. The investments in plant and equipment and the fixed charges pertaining thereto remain fairly constant. When sales drop and facilities are not utilized to capacity, expenses cannot be correspondingly reduced and the percentage of net earnings on investment is decreased. Therefore, the frequency of investment turn-over, or ratio of sales to investment, seriously affects the resulting return on investments. The more frequent the turn-over of investment or capital employed in the business, the smaller is the margin of profit on sales necessary to earn a given annual return on the investment. This is illustrated by the following statement which sets forth such data with respect to the combined operations of the four Baltimore and Boston dealers examined. The investments, sales, and profits referred to in this table necessarily include the entire milk business, but do not cover other activities or investments.

TABLE 10.—*Relation of profits on sales to returns on investments of 2 Baltimore and 2 Boston dealers examined*

Description	1930	1933	1934	1935
Investment in milk business, combined totals	$18,123,407	$16,466,202	$15,702,129	$16,324,836
Net sales of milk and milk products, combined totals	$56,482,555	$37,261,009	$40,749,651	$44,790,190
Net income from milk business, combined totals	$3,968,787	$2,408,856	$955,129	$1,990,302
Combined results:				
Rate of turnover of investment (sales divided by investment, times)	3.12	2.26	2.60	2.74
Profit on sales (income divided by sales, percent)	7.02	6.47	2.34	4.44
Return on investment (income divided by investments, percent)	21.90	14.63	6.08	12.19

The corresponding ratios for the two dealers in each of these cities were as follows:

	1930	1933	1934	1935
Baltimore dealers:				
Rate of turnover (times)	2.40	1.73	1.89	2.27
Profit on sales (percent)	10.64	10.44	7.39	6.56
Return on investments (do)	25.58	18.14	14.01	14.90
Boston dealers:				
Rate of turnover (times)	3.39	2.47	2.84	2.88
Profit on sales (percent)	6.05	5.38	1.15	3.95
Return on investments (do)	20.50	13.27	3.28	11.39

The various conditions reflected in the foregoing tables may be more clearly understood from the following statement which shows by percentages the relative investment, sales, and profits of the same four companies for the last 3 years compared with the corresponding totals for 1930:

Description	1930	1933	1934	1935
Investment in milk business (percent)	100	91	87	90
Net sales of milk and milk products (do)	100	66	72	79
Net income from milk business (do)	100	61	24	50

The foregoing figures show the lowest volume of sales in 1933, but the margin of profit on sales in that year improved and a substantial return on the capital employed in the business was earned.

The lowest return on investment is shown for 1934 (table 10), when the margin of profit on sales was likewise lowest and turn-over lower than in either 1930 or 1935. Sales for 1934 were considerably more than for 1933, and turn-over was also higher but these increases were insufficient to offset the relatively low margin of profit on sales. The net result was a return on investment of 6.08 percent compared with the 14.63 percent earned during 1933.

The much higher return on investment of 12.19 percent for 1935 plainly resulted from substantial increases in sales turn-over and margin of profit on sales.

SECTION 2. SALES AND PROFITS OF THE MILK DIVISIONS FOR THE MONTH OF OCTOBER 1935

The dealers referred to in this section include one in Baltimore, two in Boston, four in Cincinnati, and three in St. Louis.

Data presented in the preceding chapter concerning dealers spreads for the month of October 1935 show that the gross margins per quart within which these dealers operated during that month represented about one-half of net sales and averaged from 3 to 5 cents per quart. Such spreads varied greatly for the different classes of milk and milk products, and also varied from 1½ to 2 cents per quart for the same classes. The average margins for all classes combined varied likewise. Such spreads represent the difference between costs of raw products and sales of finished products. The nature of milk and milk products included in the classes referred to has been stated in the section covering dealers' spreads.

Average prices paid and received, in each of the cities by these dealers during October 1935 varied greatly as shown by the following tabulation.[40]

Description	Paid (cents per quart)		Received (cents per quart)	
	Maximum	Minimum	Maximum	Minimum
Fluid milk sales	6.14	4.42	11.27	9.35
Fluid cream sales	5.28	3.21	8.82	5.89
Other classes of milk and milk products	5.73	3.33	10.76	5.97
Average for all classes	5.33	3.86	10.35	7.72

The operating profits of these dealers vary, not only by reason of their various spreads for each class of products, but also the relative quantities handled of each class and the portions thereof sold to their retail and wholesale trade, as discussed in chapter III, section 1.

The profits of these dealers were also affected by the relation of sales to plant capacities and the ratios of their various expenses to sales. Delivery expense was the most important item of expense and the one that varied most.

The following table shows the combined sales, expenses, and operating profits of these 10 dealers for the month of October 1935, and also shows the maximum variations in their cost of raw materials, each class of expense and operating profit:

TABLE 11.—*Combined sales, expenses, and net profits for the month of October 1935 of the milk divisions of 10 companies (1 in Baltimore, 2 in Boston, 4 in Cincinnati, and 3 in St. Louis)*

	Combined totals		Separate dealers	
	Amount	Percent of net sales	Maximum	Minimum
Net sales	$4,140,371.32	100.0	*Percent*	*Percent*
Cost of raw materials	2,299,729.16	55.5	58.86	46.83
Gross spread	1,840,642.16	44.5	53.17	41.14
Processing expense	422,246.63	10.2	13.99	8.19
Delivery expense	1,053,245.46	25.4	35.02	22.55
Selling expense	135,141.97	3.3	6.06	1.94
Administrative expense	117,114.38	2.8	4.48	2.33
Total costs, exclusive of raw materials	1,727,748.44	41.7	57.22	35.47
Cost of sales	4,026,664.86	97.2	112.59	92.56
Net profit from operations	113,706.46	2.8	7.44	
Net loss from operations				12.59

The average spreads of Cincinnati dealers examined were about 0.7 of a cent per quart less than in Baltimore, and their operating profits were correspondingly less.

Of the dealers referred to, only those in St. Louis sustained losses from this month's operations, and that likewise applied to the year 1935. Their losses were obviously due to the fact that their class I spread was much less and their delivery expenses considerably more than for the other dealers examined.

The Boston companies examined operated profitably under approximately the same average spread as the St. Louis dealers referred to. These varying results were principally due to the fact that the delivery and processing expenses of the St. Louis dealers were relatively much more than for the Boston dealers.

These conditions are shown by the following statement which sets forth the combined operations of the dealers examined in each of the cities referred to:

[40] See ch. III, sec. 1, for discussion of method of computation.

TABLE 12.—*Percentage of operating expenses and net profits from operations to net sales for all milk distributors examined by cities for October 1935* [1]

	1 Baltimore company	4 Cincinnati companies	3 St. Louis companies	2 Boston companies
	Percent	*Percent*	*Percent*	*Percent*
Total net sales	100.00	100.00	100.00	100.00
Cost of raw materials	51.29	48.55	56.35	57.64
Gross spreads	48.71	51.45	43.65	42.36
Processing expense	13.17	11.29	12.37	8.35
Delivery expense	22.55	26.81	31.99	23.25
Selling expense	4.14	3.86	3.64	2.77
Administrative and general expense	2.90	4.28	3.33	2.33
Total selling, administrative, and general expenses	7.04	8.14	6.97	5.10
Total cost, exclusive of raw materials	42.76	46.25	51.33	36.70
Total costs and expenses	94.05	94.80	107.68	94.34
Less discounts on purchases	[2]	.05	[2]	.02
Cost of sales	94.05	94.75	107.68	94.32
Net profit from operations	5.95	5.25	[3] 7.68	5.68
Gross spread per quart of milk:	*Cents per quart*	*Cents per quart*	*Cents per quart*	*Cents per quart*
Fluid-milk sales	5.21	5.90	4.34	5.12
Fluid-cream sales	3.54	4.32	2.68	[4]
Other classes of milk	5.03	2.64	2.44	[4]
Average	5.02	4.28	3.41	[4]

[1] The gross spread per quart figures include some ice-cream business of 2 companies, but the other data are for the milk divisions.
[2] Discounts on purchases not ascertained.
[3] Red figure or loss from operations.
[4] Omitted because available for only 1 company; its average spread was 3.35 cents per quart.

SECTION 3.—SALES, EXPENSES, AND PROFITS OF THE MILK DIVISIONS OF MILK COMPANIES FOR THE YEARS 1930, 1933, 1934, AND 1935

Of the 11 milk companies examined, some engaged exclusively in the distribution of milk and cream, whereas the operations of others included not only milk divisions but also ice-cream and butter divisions, condenseries, stores, restaurants, bakeries, and other activities. For comparative purposes the income and expense of only the milk divisions were used.

The combined net sales of the milk divisions of the 11 companies examined were $68,666,465 in 1930, $47,872,702 in 1934, and $51,108,872 in 1935.

The decreased volume of such combined sales of these companies during the last 3 years, compared with corresponding sales for 1930,

may be more readily seen by the following ratios expressed in percentages of 1930 totals:

Year—	Percent
1930	100
1933	54
1934	70
1935	74

During those same years the net profits of the combined milk divisions were $4,640,055 in 1930, $676,300 in 1934, and $1,316,129 in 1935.

Fixed charges, such as depreciation, taxes, and insurance pertaining to plants and delivery equipment, continued fairly constant and controllable expenses were not reduced ratably with such decreased sales. Consequently, the cost of sales was relatively more and operating profits less during the later years.

The ratios of net profits to net sales were 6.8 percent in 1930, 1.4 percent in 1934, and 2.6 percent in 1935. The total cost of operations of the milk divisions were equal to 93.2 percent of net sales in 1930, 98.6 percent in 1934, and 97.4 percent in 1935.

Comparisons of the combined net sales and expenses of the milk divisions in amounts and ratios for the 11 companies for the years 1930, 1933, 1934, and 1935 are given in the following table:

TABLE 13.—*Comparative statement of the combined total amounts of net sales and expenses of the milk divisions of 11 companies and the ratios of expenses compared to net sales during [1] 1930,[2] 1933, 1934, and 1935 [3]*

Income and expenses of the milk divisions	Combined net sales and expenses milk division of 11 companies				Ratios of expenses to net sales (percent)			
	1930	1933	1934	1935	1930	1933	1934	1935
Total, net sales	$68,666,465	$36,862,044	$47,872,702	$51,108,872	100.0	100.0	100.0	100.0
Cost of raw materials	39,050,475	18,853,547	27,193,666	29,460,102	56.9	51.1	56.8	57.7
Gross spread	29,615,990	18,008,497	20,679,023	21,648,770	43.1	48.9	43.2	42.3
Processing expense	7,330,048	3,830,016	4,715,567	4,672,196	10.7	10.4	9.8	9.1
Delivery expense	14,447,918	10,283,161	12,522,614	12,970,726	21.0	27.9	26.2	25.4
Selling expense	1,593,433	1,167,180	1,458,883	1,417,312	2.3	3.2	3.0	2.8
Administrative and general expense	1,685,247	1,105,092	1,367,276	1,336,666	2.5	2.9	2.9	2.6
Total, selling, administrative, and general expense	3,278,680	2,272,272	2,826,159	2,753,978	4.8	6.2	5.9	5.4
Total cost, exclusive of raw materials	25,056,646	16,385,449	20,064,340	20,396,900	36.5	44.4	41.9	39.9
Total cost and expenses	64,107,121	35,238,997	47,258,006	49,857,002	93.4	95.6	98.7	97.6
Less discount on purchases	80,711	51,227	61,603	64,259	.2	.1	.1	.2
Cost of sales	64,026,410	35,187,770	47,196,402	49,792,743	93.2	95.5	98.6	97.4
Net profit from operations	4,640,055	1,674,274	676,300	1,316,129	6.8	4.5	1.4	2.6

[1] Figures of 2 companies for 1931 were used.
[2] Figures of 1 company not available for 1933.
[3] Calendar years were used or the fiscal year nearest the calendar year.

The true comparative cost of raw materials in the several localities is only partially indicated by the ratios of costs to net sales. Prices paid and received for milk and other products both varied greatly during these years. The relative quantities of milk of the different classes purchased and sold and also the comparative quantities sold

retail and wholesale affected both sales and expenses. Labor costs also varied during the years. These and other factors, as well as the extent to which facilities were utilized to capacity, affected the ratios of expenses and profit to sales. The nature and relative extent of milk and milk products sold varied greatly between the different companies examined as well as between the years under review. The relative extent to which various products were handled may be indicated by the following ratios of dollar sales of various products to total sales for 10 individual distributors for the month of October 1935:

Company	Fluid milk	Fluid cream	Other products
	Percent	Percent	Percent
No. 1	78	8	14
No. 3	62	9	29
Nos. 4, 5, 6	41	10	49
No. 7	53	12	35
No. 8	62	12	26
No. 9	60	13	27
No. 10	77	18	5
No. 11	68	17	15

Variations in the nature of fluid milk and cream sales are likewise indicated by the following statement. The ratios in this case are based on quantities sold during 1935 by eight of the companies examined.

Statement showing the variable nature of 1935 fluid milk and cream sales

Description	Percentages of total quantities of fluid milk and cream sold by 8 individual dealers							
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
Fluid milk:								
Bottled milk:								
Retail	57	62	44	50	41	40	46	37
Wholesale	21	13	6	11	14	33	23	23
Total, bottled milk	78	75	50	61	55	73	69	60
Bulk milk:								
Retail				2				
Wholesale	5	5	12	9	5	2	4	6
Total, bulk milk	5	5	12	11	5	2	4	6
Total, fluid milk	83	80	62	72	60	75	73	66
Fluid cream:								
Bottled cream:								
Retail	6	10	4	4	11	13	14	7
Wholesale	6	5	2	3	5	9	7	14
Total, bottled cream	12	15	6	7	16	22	21	21
Bulk cream:								
Retail								
Wholesale	5	5	32	21	24	3	6	13
Total, bulk cream	5	5	32	21	24	3	6	13
Total, fluid cream	17	20	38	28	40	25	27	34
Total, fluid milk and cream [1]	100	100	100	100	100	100	100	100

[1] Annual data for other milk products were not in all cases available.

The ratios of the different classes of expenses to net sales for the milk divisions of these dealers in four of the milk markets, to some extent show the trends of costs of raw materials, other operating costs, and net profits during the period in question. These are briefly summarized below:

	2 Baltimore companies	4 Cincinnati companies	3 St. Louis companies	2 Boston companies
Cost of raw materials:	*Percent*	*Percent*	*Percent*	*Percent*
1930	[1] 56.5	53.5	[1] 53.5	[2] 59.3
1933	[2] 55.3	43.9	43.8	[2] 55.5
1934	52.7	46.2	50.2	[2] 63.2
1935	55.6	47.8	51.8	62.4
Other operating costs:				
1930	32.3	41.4	40.4	34.9
1933	38.6	54.9	54.6	38.1
1934	39.9	48.9	49.7	37.4
1935	38.4	47.2	49.6	35.0
Net profits:				
1930	11.2	5.1	6.1	5.8
1933	6.1	1.2	1.6	6.4
1934	7.4	4.9	.1	[4] .6
1935	6.0	5.0	[4] 1.4	2.6

[1] Includes 1931 figures for 1 company.
[2] Includes 1 company's fiscal year ended Feb. 28 of the following year.
[3] For only 1 company.
[4] Indicates loss from operations.

The following tabulation shows the trends of the ratios of certain expenses to net sales of the same companies and periods referred to in the preceding table:

	2 Baltimore companies	4 Cincinnati companies	3 St. Louis companies	2 Boston companies
Processing expense:	*Percent*	*Percent*	*Percent*	*Percent*
1930	8.9	9.5	11.4	11.2
1933	6.2	14.0	14.8	8.0
1934	9.5	12.5	13.8	7.6
1935	9.9	12.0	12.2	7.2
Delivery and selling expense:				
1930	20.6	28.1	26.5	21.9
1933	29.3	35.6	36.2	28.0
1934	27.0	31.7	32.8	27.9
1935	25.6	30.8	34.2	26.1
Administrative and general expense less discounts on purchases:				
1930	2.8	3.8	2.5	1.8
1933	3.1	5.3	3.6	2.1
1934	3.4	4.7	3.1	1.9
1935	2.9	4.4	3.2	1.7

The relative efficiency of the respective companies is, of course, reflected to some extent in these ratios. The ratios of processing expenses to net sales are also affected by other factors. The primary elements affecting the ratio of processing expense are the nature and volume of products processed. Country receiving-station expenses are included in the processing expenses here referred to. Relatively more such stations were operated by the Boston dealers examined than by those in Baltimore and St. Louis whereas none were operated by the Cincinnati dealers examined. Where country stations were operated, total processing expenses included the expense of receiving the milk at country stations and also the expense of receiving the same milk or products therefrom at the city plants. Yet, in recent years, the ratios of processing expenses to net sales were lower for these Boston companies than for the other dealers examined.

The ratios of delivery expenses to net sales were relatively higher for the companies in St. Louis than for those in other localities. Some of these companies did not segregate on their books the delivery expense and selling expense.

In the case of most of the companies examined, labor costs included in delivery expenses were reduced proportionately more than their total delivery expense. This was presumably due to the fixed charges included therein, such as depreciation, taxes and insurance.

The relative reductions in net sales and in such delivery labor and expense for 1935 compared with 1930 are shown in the following tabulation:

Description	Percentage of decreases for 1935 compared with 1930		
	Net sales	Total delivery expense	Labor included in delivery expense [1]
Companies:			
Baltimore, no. 1	31	14	16
Baltimore, no. 2	19	[2] 6	3
Cincinnati, no. 3	30	28	31
Cincinnati, nos. 4, 5, and 6	35	21	28
St. Louis, no. 7	24	7	15
St. Louis, no. 8	19	8	17
St. Louis, no. 9	36	15	17
Boston, no. 10	20	4	2
Boston, no. 11	22	6	[2] 3

[1] Exclusive of some labor of service departments such as stable, garage, and maintenance, that could not be readily segregated.
[2] Denotes increases.

The comparative amounts of general and administrative expense and the ratios thereof to sales are influenced by a number of factors, and to some extent by the various methods of classifying expenses. Companies having more than one operating division, generally allocated arbitrarily the general expenses between these divisions.

Appendix tables 2 to 5, inclusive, show for each year 1930, 1933, 1934, and 1935, the ratios of expenses and profits to net sales of the dealers examined in each of the four market areas. These appendix tables show that there were wide variations in the relative cost of the combined operations of the milk divisions of these companies in each of the cities referred to. The ratios of expenses to net sales of the individual companies varied even more. For instance, during 1930, 1933, 1934, and 1935, the highest ratio of cost of material for any one company was 64.8 percent, while the lowest was 41.7 percent. The variations in the ratios of other classes of expense to sales were also pronounced. The maximum ratio of processing expense was 17.8 percent and the minimum was 5.3 percent, while the highest and lowest ratios for delivery expenses were 33.8 and 17.1 percent of sales, respectively. The maximum ratio of net profit to sales of one company was 11.3 percent, whereas the maximum loss represented by another company was equal to 4.8 percent of net sales.

The following tabulation shows the extent to which the expenses and profits of the individual dealers varied in relation to their net sales during the years 1930, 1933, 1934, and 1935:

Comparative statement showing variations during the years 1930, 1933, 1934, and 1935, in the ratios of expenses to net sales of the milk divisions for 11 companies

Description	Percentage of net sales	
	Maximum	Minimum
Cost of raw materials	64.8	41.7
Gross spread (net sales less cost of raw materials)	58.3	35.2
Processing expense	17.8	5.3
Delivery expense	33.8	17.1
Selling expense	6.2	1.1
Administrative and general expense	5.6	1.7
Total selling, administrative and general expense	11.4	2.9
Total costs, exclusive of raw materials	56.5	31.5
Total cost of sales	104.8	88.7
Net profit from operations	11.3	[1] 4.8

[1] Indicates loss.

As previously stated, the composite average margin of operating profit on net sales of the milk division of these 11 companies was as follows for the respective years:

	Percent		Percent
1930	6.8	1934	1.4
1933	4.5	1935	2.6

SECTION 4. INVESTMENT, NET INCOME, AND RATES OF RETURN

Explanation of terms and bases used.—The net income of each of the 11 milk and milk-products companies examined is related to the investment of the respective companies for the purpose of determining the rate of return on the investment. The rates of return were calculated before deductions for Federal income tax and are expressed in percentages. A study of the nature of the investments of these companies reveals the necessity for using adjusted investment bases to obtain comparable rates of return. Most of the companies examined had only a part of their capital invested in the milk and milk-products business, although that was the principal business of those companies. In some instances the recorded capital of certain companies had been written up by the companies in recording appreciation on their books. Therefore, rates of return are shown on different bases. The investments in outside business were excluded from the total investment to determine the investment in the milk and milk-products business. The recorded capital, various investments, and adjustments necessary to establish the different bases on which rates of return were calculated are further discussed under the following subheadings: (1) Capital structure as of December 31, 1935, (2) capital not employed in the milk business, (3) appreciation not paid for in cash or equivalent and (4) goodwill paid for in cash.

(1) *Capital structure as of December 31, 1935.*—The capital of the milk and milk-products companies examined was obtained largely from stockholders, but some companies borrowed part of their capital. A few companies issued preferred stock, but most of the invested capital was represented by the common-stock holders' equity, consisting of original investment and reinvested earnings. In general, earnings were the primary source of capital. The aggregate invested and borrowed capital, exclusive of appreciation, on December 31, 1935, for the 11 companies examined, was $29,221,524, of which $26,255,844, or 89.85 percent, represented the stockholders' investment. The preferred-stock holders provided 19.02 percent of the total capital, and the common-stock holders provided 70.83 percent, of which 30.05 percent was then indicated by the records to be original capital and 40.78 percent as earned surplus, or reinvested earnings. The proportion of reinvested earnings was actually much greater than this, because of transfers from earned surplus to the common-stock account through stock dividends, as shown by the common-stock account as of December 31, 1935. Of the total of $29,221,524 of capital, 19.27 percent was invested in property, securities, and advances which were not used in the milk and milk-products business. The balance represented investment in the milk and milk-products business, which investment may be divided between (1) tangible property and net current assets and (2) goodwill. The goodwill paid for was equal to 9.95 percent of the total investment.

The total recorded capital of the 11 companies examined was $33,680,817, of which $29,221,524 or 86.76 percent, was paid for in cash or equivalent and 13.24 percent, or $4,459,293 represented known write-ups, or appreciation. The early records of some of these companies were not examined. The known appreciation, amounting to $4,459,293, recorded in the capital-liability accounts, was likewise recorded in the asset accounts as follows: $2,901,674 was added to the goodwill accounts, and $1,557,619 was buried in the fixed capital accounts.

The source of the capital, so far as determined, and nature of the combined investments of the 11 milk and milk-products companies as of December 31, 1935, are shown in the following table:

TABLE 14.—*Statement showing source of capital and nature of combined investments of the 11 milk and milk-products companies examined, as at Dec. 31, 1935*

	11 companies combined	
	Amount	Percent
DESCRIPTION OF CAPITAL AND INVESTMENTS		
Source of capital at Dec. 31, 1935:		
Preferred stock (excluding appreciation)	$5,558,416	19.02
Common stock (excluding appreciation)	8,782,315	30.05
Surplus and surplus reserves (excluding appreciation)	11,915,113	40.78
Total stockholders' investment	26,255,844	89.85
Loans and notes payable	2,510,900	8.59
Advances from affiliated companies	454,780	1.56
Total invested and borrowed capital (excluding appreciation)	29,221,524	100.00
Total capital and appreciation:		
Total invested and borrowed capital (excluding appreciation)	29,221,524	86.76
Appreciation recorded as preferred stock	294,628	.88
Appreciation recorded as common stock	3,490,859	10.36
Appreciation recorded as surplus	673,806	2.00
Total recorded capital	33,680,817	100.00

TABLE 14.—*Statement showing source of capital and nature of combined investments of the 11 milk and milk-products companies examined, as at Dec. 31, 1935*—Con.

	11 companies combined	
	Amount	Percent
NATURE OF INVESTMENTS AT DEC. 31, 1935		
Investments not used in milk or milk-products business:		
Known idle property not disposed of	$1,445,931	4.95
Known property used in business other than milk business	1,468,000	5.02
Marketable securities	1,711,343	5.86
Investment in securities of other companies	274,194	.94
Advances to affiliated companies or officers	731,875	2.50
Total investment not used in the milk business	5,631,343	19.27
Goodwill paid for in cash or equivalent	2,908,430	9.95
Tangible investment in the milk and milk-products business	20,681,751	70.78
Total investment	29,221,524	100.00
Total investments and appreciation:		
Total investment	29,221,524	86.76
Appreciation recorded as goodwill	2,901,674	8.62
Appreciation recorded as tangible investment	1,557,619	4.62
Total investments and appreciation	33,680,817	100.00

The preceding tabulation indicates, as previously stated, that surplus funds accumulated from earnings are the primary source of capital of these companies. One company, as of December 31, 1935, had obtained 83.18 percent of its total capital from earnings. Another company, however, showed a deficit from operations instead of a surplus.

The history of the growth of milk companies indicates that they usually began operations on a small scale with a limited amount of original capital and have expanded over a long period of time. The existing companies from time to time acquired smaller companies, and even the businesses of single-route drivers were sometimes acquired. Occasionally companies of considerable size were merged or consolidated. Some of the milk companies have been controlled by a single family for a great many years, although many are now controlled by holding companies. The fact that most of the milk companies have had sufficient earnings for such expansion would indicate that this business has been, on the whole, a profitable business.

The source and amounts of the invested and borrowed capital, consisting of stockholders' equity and long-term debt, of each of the milk and milk-products companies examined as of December 31, 1935, are shown in the following table:

TABLE 15.—*Statement showing the source of invested capital of milk and milk-products companies examined as at Dec. 31, 1935*

Company no.	Locality	Preferred stock, less appreciation reflected therein	Common stock, less appreciation reflected therein	Surplus and surplus reserves, less appreciation recorded in the surplus accounts	Total stockholders' investment, excluding appreciation	Loans and notes payable	Advances from affiliated companies	Total invested and borrowed capital (exclusive of appreciation)
		Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
1	Baltimore	[1] 20.09	[1] 0.34	[1] 76.94	97.37		2.63	100.00
2	do		[1] 66.67	[1] 17.67	83.74	16.26		100.00
3	Cincinnati	5.99	[1] 20.85	[2] 8.81	18.03	81.97		100.00
4	do		20.15	[2] 70.85	100.00			100.00
5	do		56.20	36.06	92.26		7.74	100.00
6	do		25.34	[3] 44.64	69.98		30.02	100.00
7	St. Louis		18.76	61.48	80.24		19.76	100.00
8	do		57.63	42.37	100.00			100.00
9	do	14.50	1.14	83.18	98.82	1.18		100.00
10	Boston	28.05	42.97	28.98	100.00			100.00
11	do	22.78	57.62	10.42	90.82	9.18		100.00
	Percent of total	19.02	30.05	40.78	89.85	8.59	1.56	100.00
	Total (11 companies)	$5,558,416	$8,782,315	$11,915,113	$26,255,844	$2,510,900	$454,780	$29,221,524

[1] Adjusted by the commission to remove appreciation recorded by the company in preferred stock, common stock, and surplus accounts.
[2] Surplus deficit from operations after adjustments to remove appreciation.
[3] Adjusted by the commission to remove capital surplus which had been recorded by the company for the purpose of facilitating the holding company in making consolidated reports.

(2) *Capital not employed in the milk business.*—Of the 11 milk companies examined, 8 had investments outside of the milk business. These outside investments are classified into four groups, namely (*a*) abandoned or useless milk plants, equipment and properties which have not been disposed of or written off, (*b*) property used in a business which is foreign to the milk industry, (*c*) marketable securities or securities of other companies and, (*d*) advances of surplus funds to affiliated companies or to officers of the company. Each of these four classes of outside investments is discussed hereafter.

Most milk companies examined still carried on their books some properties that were abandoned or no longer used, after new plants were constructed or operations were concentrated in other plants.

The idle or abandoned milk fixed property and equipment was very carefully segregated by some of these companies from that which was used or useful in the milk business.

Seven of the eleven companies had recorded their investment in idle property separately from the other asset accounts. The amounts thereof were not obtained for those companies which did not make such a segregation, because time did not permit the necessary analysis of their fixed assets.

Two of the milk and milk products companies had investments in a business that was foreign to their principal business and the amounts of those investments and the income therefrom were segregated from their milk business. Some of the other companies had investments in businesses which were not directly related to the milk business, the amounts of which could not readily be segregated and therefore are not shown in this report. In the instances where these investments could be readily determined and the income and expense applicable

thereto could be readily segregated from the income derived from the milk business, they were excluded from the milk business in determining the rates of return.

The amount and nature of the investments of milk companies in marketable and other securities varied in accordance with the policies of the different companies. Two milk companies which had a policy of maintaining working capital at a relatively high figure invested part of their surplus funds in marketable securities. Five of the milk companies examined had miscellaneous investments in securities of other companies.

The milk companies which were controlled by holding companies, or which were affiliated with other companies, or cooperatives, often advanced funds to their affiliates. Such advances of surplus working capital constituted investments outside the milk business of the companies which made the advances.

The amounts of the known outside investments, not a part of the milk or milk-products business, were deducted from the total capital to determine the investment in the milk and milk-products business for the purpose of calculating rates of return thereon. This was done to the extent that the income, expenses, and other elements applicable thereto were available for corresponding adjustments of the net income.

The proportion of the total capital that was employed in outside investments at December 31, 1935, by the 11 companies examined, and the nature of those outside investments are shown in the following table:

TABLE 16.—*Statement showing the nature and proportion of the known outside investments not used in the milk or milk-products business at Dec. 31, 1935*

[Expressed in percent of the total investments excluding appreciation]

Company no. and locality	Known idle property not disposed of	Known property used in business other than the milk business	Marketable securities	Investment in securities of other companies	Advances to affiliated companies or officers	Total investment not used in the milk business
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
1. Baltimore	0.66	11.11	5.68	2.09	----------	28.54
2. Baltimore	10.57	----------	----------	----------	[1] 8.38	18.95
3. Cincinnati	9.53	----------	----------	0.17	22.98	32.68
4. Cincinnati	----------	----------	----------	----------	25.85	25.85
7. St. Louis	0.29	----------	----------	----------	----------	0.29
9. St. Louis	2.96	23.37	----------	4.04	----------	30.37
10. Boston	3.30	----------	12.53	0.02	----------	15.85
11. Boston	7.78	----------	----------	0.26	----------	8.04
Percent of total compared to total investment of 11 companies	4.95	5.02	5.86	0.94	2.50	19.27
Total amount (8 companies)	$1,445,931	$1,468,000	$1,711,343	$274,194	$731,575	$5,631,343

[1] Advances to officers of the company.

(3) *Appreciation not paid for in cash or equivalent.*—It was found that, at December 31, 1935, 5 of the 11 milk and milk-products companies examined had recorded in their asset accounts and in their capital accounts $4,459,293 of unrealized appreciation which had not been paid for in cash or equivalent. The unrealized appreciation amounting to $4,459,293 was equal to 13.24 percent of the total recorded capital of the 11 companies. Some of these 5 companies recorded the appreciation in their goodwill accounts and some companies increased the amount of recorded tangible fixed assets. As previously stated, the amount of $2,901,674 appeared in goodwill accounts and $1,557,619 was buried in the property accounts.

The following statement shows the proportion of appreciation and investments of each of the companies referred to as of December 31, 1935:

TABLE 17.—*Statement showing the proportion of investments and appreciation reflected in recorded capital of the 11 companies, as of Dec. 31, 1935*

Company no. and locality	Total investments	Appreciation recorded as goodwill	Appreciation recorded as tangible investment	Total recorded capital
	Percent	*Percent*	*Percent*	*Percent*
1. Baltimore	60.53	36.23	3.24	100.00
2. Baltimore	61.67	38.33	----------	100.00
3. Cincinnati	65.42	----------	34.58	100.00
4. Cincinnati	83.46	16.54	----------	100.00
5. Cincinnati	100.00	----------	----------	100.00
6. Cincinnati	91.73	8.27	----------	100.00
7. St. Louis	100.00	----------	----------	100.00
8. St. Louis	100.00	----------	----------	100.00
9. St. Louis	100.00	----------	----------	100.00
10. Boston	100.00	----------	----------	100.00
11. Boston	100.00	----------	----------	100.00
Percent of total for 11 companies	86.76	8.62	4.62	100.00
Total amount (11 companies)	$29,221,524	$2,901,674	$1,557,619	$33,680,817

(4) *Goodwill paid for in cash.*—There were 7 companies of the 11 examined that had recorded goodwill on their books, amounting to $5,810,104 as of December 31, 1935, of which $2,908,430 had been paid for in cash or equivalent and $2,901,674 was appreciation recorded as goodwill. The goodwill which had been paid for amounted to 51.04 percent of one company's actual investments and that company also recorded appreciation as goodwill. The total recorded goodwill of that company as of December 31, 1935, was equal to 69.81 percent of its total recorded capital. The goodwill paid for by another company was equal to 42.28 percent of its investments, while still another company had goodwill equal to 43.59 percent of its total recorded capital, of which 7.36 was paid for and 36.23 was appreciation. Four companies had no apparent investments in goodwill. Goodwill generally represented the cost of milk properties, or milk routes, to the vendee company in excess of the depreciated cost of such properties or routes to predecessor owners. In other words, the amount of goodwill, for which cash or equivalent had been given, was usually the difference between the depreciated costs of tangible assets to the previous owners and the total cost to the company acquiring those tangible assets. The recorded amount of goodwill was that acquired plus appreciation added thereto. Sometimes the vendors sold goodwill which they had acquired and paid for and in those instances usually the vendee company recorded that amount in its goodwill account together with any excess cost of the goodwill and tangible assets over the cost to the vendor.

Rates of return of milk and milk-products companies.—The rates of return for each of the 11 companies examined sometimes varied for

the individual companies in a given locality and likewise the trend of the rates in one locality sometimes was different than in other localities. When different bases are used for a company the results differ. Therefore, to clearly set forth the rates of return for comparative purposes, the returns calculated on three bases are given as follows: (1) on the average total invested and borrowed capital for the respective years, (2) on the average stockholders' investment, and (3) on the average total capital employed in the milk and milk-products business.

All three bases used to calculate the rates of return show rates from which some general conclusions are drawn. The rates of return generally were higher for 1930 than for 1933, 1934, or 1935. In some localities one company often had higher rates of return than its competitors. In three of the four localities examined the rates of return for 1935 were generally as high or higher than for 1933 and 1934, whereas in St. Louis all the companies examined had a loss in 1935 but a profit for the other years.

Although results are given on three general bases, namely, total invested and borrowed capital, total capital employed in the milk business, and stockholders' investment, as recorded on the companies' books, it is important to consider that some companies have recorded appreciation and goodwill, part of which was paid for and part of which was not, whereas other companies have not recorded such items. Therefore, the Commission has shown returns on not only the recorded capital but also on the adjusted capital of these companies, so as to present comparable returns and at the same time distinguish between returns on capital invested in tangible assets and returns on the combined amount of tangibles and intangibles reflected in their total recorded capital.

Normally the rate of return on the total capital, without adjustment, was lower than the return on the investment in the milk and milk products business, without adjustment, because the outside investments were less profitable than the milk business. This is illustrated in the following tabulation:

Rates of return on total recorded capital and milk business unadjusted, as of the the years 1930 and 1935

	1930		1935	
	Total recorded capital	Milk business unadjusted	Total recorded capital	Milk business unadjusted
	Percent	*Percent*	*Percent*	*Percent*
2 companies, Baltimore	14.87	15.69	7.78	8.21
4 companies, Cincinnati	7.91	8.84	4.77	6.48
3 companies, St. Louis	19.20	19.45	[1] 2.18	[1] 2.79
2 companies, Boston	16.66	20.50	9.36	11.39

[1] Loss.

The rates of return were generally higher on the stockholders' investment than on the total capital. Comparative rates on these investments, before any adjustments were made to remove appreciation, are given in the following tabulation:

Rates of return on total recorded capital and stockholders' investment, as of the years 1930 and 1935

	1930		1935	
	Total recorded capital	Stockholders' investment	Total recorded capital	Stockholders' investment
	Percent	*Percent*	*Percent*	*Percent*
2 companies, Baltimore	14.87	15.21	7.78	7.88
4 companies, Cincinnati	7.91	10.87	4.77	5.30
3 companies, St. Louis	19.20	19.84	[1] 2.18	[1] 2.33
2 companies, Boston	16.66	17.01	9.36	9.37

[1] Loss.

When the recorded investment is adjusted to eliminate appreciation or write-up, the relative rates of return on the adjusted and unadjusted bases are often found to be quite different. Such comparisons are shown in the following tabulation of rates of return on the stockholders' investment as recorded and as adjusted to eliminate appreciation:

Rates of return on stockholders' investment as recorded and adjusted, for the years 1930 and 1935

Stockholders' investment	1930		1935	
	As recorded (percent)	As adjusted (percent)	As recorded (percent)	As adjusted (percent)
2 companies, Baltimore	15.21	24.98	7.88	13.28
4 companies, Cincinnati	10.87	22.34	5.30	10.94
3 companies, St. Louis	19.84	19.84	[1] 2.33	[1] 2.33
2 companies, Boston	17.01	17.01	9.37	9.37

[1] Percent of loss.

The companies examined in St. Louis and Boston did not record any appreciation and therefore the rates of return on the stockholders' investment for those companies were not affected by such adjustments.

To further emphasize the variations in the rates of return calculated on different bases the rates on various bases are given for 1930 and 1935 for the two Baltimore companies combined in the tabulation below.

Investment bases used	Rates of return, percent	
	1930	1935
Total capital as recorded by the companies	14.87	7.78
Stockholders' investment as recorded	15.21	7.88
Stockholders' investment as adjusted	24.98	13.28
Investment in milk business as recorded	15.69	8.21
Investment in milk business as adjusted to remove appreciation	25.58	14.90
Investment in milk business as adjusted to remove appreciation and goodwill	34.31	19.27

(1) *Return on the total recorded capital.*—The total recorded capital is the actual capital invested by the stockholders plus reinvested earnings, borrowed funds, and any recorded appreciation. The total capital also includes the accruals or reserves for Federal income tax. The income, before deductions for Federal income tax, applicable to the total capital was used in calculating the rates of return on the total capital.

During the years 1930, 1933, 1934, and 1935, the highest rate of return earned by any of the companies examined on total recorded capital was 27.81 percent for one company in Cincinnati during 1930 and the lowest was a loss of 10.89 percent for a company in Boston during 1934.

All but one of the companies earned 12 percent or more on their total recorded capital during 1930. Four of these companies earned more and seven of them less than 10 percent during 1935.

Of the weighted average rates for all companies examined in any one locality the highest was 19.20 percent for three companies in St. Louis during 1930 and the lowest was a loss of 2.18 percent also for three companies in St. Louis for the year 1935.

The rates of return on total capital as recorded by the companies for 1930, 1933, 1934, and 1935, are shown in the following table:

TABLE 18.—*Comparative statement showing rates of return [1] of milk and milk-product companies examined for the calendar years [2] 1930, 1933, 1934, and 1935 based on the total capital as recorded by each company*

Milk and milk-product companies	Calendar year—			
	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
Company no. 1	[3] 14.99	11.34	8.26	8.62
Company no. 2	13.93	4.70	4.79	2.84
2 companies, Baltimore [4]	14.87	10.39	7.78	7.78
Company no. 3	[3] 4.19	[3] 2.10	1.68	2.60
Company no. 4	27.81	3.01	13.99	16.37
Company no. 5	21.24	6.69	15.31	13.30
Company no. 6	17.41	5.93	10.26	12.29
4 companies, Cincinnati [4]	7.91	[3] .51	4.17	4.77
Company no. 7	25.98	5.66	5.23	[3] 3.13
Company no. 8	13.86	2.16	1.89	[3] 8.49
Company no. 9	17.97	2.50	[3] 1.43	[3] .84
3 companies, St. Louis [4]	19.20	3.15	.37	[3] 2.18
Company no. 10	17.89	11.65	5.64	11.61
Company no. 11	11.99	2.30	[3] 10.89	[3] .28
2 companies, Boston [4]	16.66	9.74	2.31	9.36

[1] Before any deductions for Federal income tax.
[2] For 1 company the fiscal year ending Feb. 28 was used.
[3] Calendar year 1931.
[4] Weighted average.
[5] Indicates rate of loss.

(2) *Return on stockholders' investment.*—The stockholders' investment here referred to consisted of the recorded amounts of preferred stock, common stock, and surplus before provision for Federal income tax. The income relating to the stockholders' investment, before deductions from income for Federal income tax, was used in calculating the rates of return on the stockholders' investment. Since some companies had recorded appreciation in the stock or surplus accounts the rates of return are shown before and after adjusting the stockholders' investment. Appreciation as recorded on December 31, 1935, by five of the companies examined, amounted to $4,459,293, which was equal to 13.24 percent of the total recorded capital of the 11 companies examined. The appreciation on the books of each of the five companies was 39.47 percent, 38.33 percent, 34.58 percent, 16.54 percent and 8.27 percent of the respective total recorded capital of each company.

The rates of return on stockholders' investment, before and after eliminating the appreciation previously referred to, are shown in detail in the following two tables. The first table shows returns before such adjustments, and the second table, after such adjustments of stockholders' investments, in each of the companies examined.

TABLE 19.—*Comparative statement showing rates of return [1] of milk and milk-product companies examined for the calendar years [2] 1930, 1933, 1934, and 1935 based on stockholders' investment as recorded by each company*

Milk and milk-product companies	Calendar year—			
	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
Company no. 1	[3] 15.34	12.81	8.78	8.75
Company no. 2	14.28	4.51	4.52	2.46
2 companies, Baltimore [4]	15.21	11.52	8.19	7.88
Company no. 3	[3] 4.91	[3] 7.75	[3] 1.54	.62
Company no. 4	27.81	3.01	13.99	16.37
Company no. 5	23.05	7.12	15.74	13.70
Company no. 6	26.57	9.54	15.88	15.62
4 companies, Cincinnati [4]	10.87	[3] 3.61	3.85	5.30
Company no. 7	30.73	5.94	5.28	[3] 4.08
Company no. 8	13.86	2.16	1.89	[3] 8.49
Company no. 9	17.97	2.50	[3] 1.43	[3] .84
3 companies, St. Louis [4]	19.84	3.19	.33	[3] 2.33
Company no. 10	17.89	11.65	5.64	11.61
Company no. 11	13.13	1.97	[3] 11.90	[3] .95
2 companies, Boston [4]	17.01	9.77	2.25	9.37

[1] Before any deduction for Federal income tax.
[2] For 1 company the fiscal year ending Feb. 28 was used.
[3] Calendar year 1931.
[4] Weighted average.
[5] Indicates rate of loss.

TABLE 20.—*Comparative statement showing rates of return [1] of milk and milk-product companies examined for the calendar years [2] 1930, 1933, 1934, and 1935 based on stockholders' investment as adjusted by the Commission to eliminate appreciation*

Milk and milk-product companies	Calendar year—			
	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
Company no. 1	[3] 24.82	22.41	15.09	14.67
Company no. 2	26.27	7.31	8.06	4.27
2 companies, Baltimore [4]	24.98	19.90	14.15	13.28
Company no. 3	[3] 17.60	[3] 30.64	[3] 7.36	2.61
Company no. 4	27.81	3.01	13.99	16.37
Company no. 5	23.05	7.12	15.74	13.79
Company no. 6	26.57	9.84	15.88	15.62
4 companies, Cincinnati [4]	22.34	[3] 7.49	8.27	10.94
Company no. 7	30.73	5.94	5.28	[3] 4.08
Company no. 8	13.86	2.16	1.89	[3] 8.49
Company no. 9	17.97	2.50	[3] 1.43	[3] .84
3 companies, St. Louis [4]	19.84	3.19	.33	[3] 2.33
Company no. 10	17.89	11.65	5.64	11.61
Company no. 11	13.13	1.97	[3] 11.90	[3] .95
2 companies, Boston [4]	17.01	9.77	2.25	9.37

[1] Before any deductions for Federal income tax.
[2] For 1 company the fiscal year ending Feb. 28 was used.
[3] Calendar year 1931.
[4] Weighted average.
[5] Indicates rate of loss.

(3) *Return on capital invested in the milk and milk-products business.*—Of the 11 companies examined, 8 had investments outside the milk business. In order to show returns on capital employed in the milk business, the outside investments and the income therefrom were eliminated. The nature of these outside investments has already been discussed earlier in this section. Five of the 11 companies recorded appreciation and 7 carried goodwill on their books, whereas the others did not. Therefore, for the purpose of showing suitable comparisons, three bases are used to show rates of return on the milk and milk-products business. The three bases are (1) total capital recorded on company books with only outside investments eliminated, (2) with outside investments and appreciation eliminated, and (3) with outside investments, appreciation and also goodwill which had been paid for, eliminated. The proportions of outside investments, goodwill paid for and tangible investment in the milk business, for each company examined, are shown in the following table. The tangible investments, herein referred to, cover all assets not specifically excluded, and such tangibles accordingly include net current assets as well as plant and equipment and other physical properties, or fixed assets.

TABLE 21.—*Statement showing the proportion of investment of milk and milk-products companies in outside investment, goodwill, and tangible investment in the milk business at Dec. 31, 1935*

Company number and locality	Known investment not used in the milk and milk-products business	Goodwill in milk business (portion paid for in cash or equivalent)	Tangible investment in the milk and milk-products business (exclusive of any unrealized appreciation)	Total investment paid for in cash or equivalent
	Percent	*Percent*	*Percent*	*Percent*
1. Baltimore	28.54	12.16	59.30	100
2. Baltimore	18.95	51.04	30.01	100
3. Cincinnati	32.68	----------	67.32	100
4. Cincinnati	25.85	----------	74.15	100
5. Cincinnati	----------	----------	100.00	100
6. Cincinnati	----------	19.32	80.68	100
7. St. Louis	.29	3.63	96.08	100
8. St. Louis	----------	----------	100.00	100
9. St. Louis	30.37	----------	69.63	100
10. Boston	15.85	6.60	77.55	100
11. Boston	8.04	42.28	49.68	100
Total amount, 11 companies	$5,631,343	$2,908,430	$20,681,751	$29,221,524
Percent of total	19.27	9.95	70.78	100

Comparisons of the effect of adjusting the investment basis, so as to eliminate appreciation and goodwill in determining the rates of return on the milk and milk-products business, are illustrated in the following table:

TABLE 22.—*Rates of return on the milk and milk-products business*

Locality	Number of companies combined	Before and after adjustments					
		1930 (weighted averages)			1935 (weighted averages)		
		As recorded on companies' books, with only outside investments eliminated	With outside investments and appreciation eliminated	With outside investments, appreciation and goodwill which had been paid for eliminated	As recorded on companies' books, with only outside investments eliminated	With outside investments and appreciation eliminated	With outside investments, appreciation and goodwill which had been paid for eliminated
		Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Baltimore	2	15.69	25.58	34.31	8.21	14.90	19.27
Cincinnati	4	8.84	13.07	13.25	6.48	10.00	10.15
St. Louis	3	19.45	19.45	19.57	[1] 2.79	[1] 2.79	[1] 2.82
Boston	2	20.50	20.50	23.95	11.39	11.39	13.49

[1] Percent of loss.

The companies examined in Baltimore had recorded relatively more appreciation and also had relatively more goodwill which had been paid for, than the companies examined in other localities. Elimination of these items for 1930 resulted in an increase from 15.69 percent to 34.31 percent in the rate of return for the Baltimore companies whereas for the St. Louis companies the rate increased only from 19.45 percent to 19.57 percent. Corresponding increases for the Cincinnati and Boston companies were less than for the Baltimore companies during both years, as shown by the foregoing table.

The rates of return for each of the 11 companies for 1930, 1933, 1934, and 1935, based on total capital employed in the milk and milk products business as recorded by the companies, or in other words with only outside investments eliminated from total recorded capital, are shown in the following table:

TABLE 23.—*Comparative statement showing rates of return [1] of milk and milk-product companies examined, for the calendar years [2] 1930, 1933, 1934, and 1935, based on the recorded capital in the milk and milk-products business*

Milk and milk-products companies	Calendar year—			
	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
Company no. 1	[3] 15.74	11.69	8.52	9.14
Company no. 2	15.28	5.40	5.36	2.98
2 companies, Baltimore [4]	15.69	10.85	8.06	8.21
Company no. 3	[3] 5.00	[3] 1.62	2.71	3.91
Company no. 4	28.17	2.67	16.79	22.01
Company no. 5	21.44	6.75	15.41	13.34
Company no. 6	17.41	5.93	10.26	12.29
4 companies, Cincinnati [4]	8.84	[5] .01	5.45	6.48
Company no. 7	26.03	5.68	5.24	[3] 3.14
Company no. 8	13.86	2.16	1.90	[5] 8.51
Company no. 9	18.66	3.44	[5] .98	--------
3 companies, St. Louis [4]	19.45	3.72	.47	[5] 2.79
Company no. 10	22.91	16.38	7.76	14.33
Company no. 11	13.02	3.45	[5] 11.75	[5] .08
2 companies, Boston [4]	20.50	13.27	3.28	11.39

[1] Before any deductions for Federal income tax.
[2] For 1 company the fiscal year ending Feb. 28 was used.
[3] Calendar year 1931.
[4] Weighted average.
[5] Indicates rate of loss.

It has been previously shown in this report that five companies had appreciation recorded on their books. Two of those five companies had recorded contra items in their goodwill accounts and in their capital surplus accounts for the purpose of facilitating the holding company in making consolidated reports. These items for the respective companies were equal to 16.54 percent and 8.27 percent of their total recorded capital at December 31, 1935. Three other companies had recorded appreciation in amounts equal, at December 31, 1935, to 39.47 percent, 38.33 percent, and 34.58 percent of their total recorded capital.

The rates of return on the milk and milk-products business with all such appreciation eliminated by the Commission are shown in the following table:

TABLE 24.—*Comparative statement showing rates of return [1] of milk and milk-product companies examined, for the calendar years [2] 1930, 1933, 1934, and 1935, based on the capital invested in the milk and milk-products business, after eliminating all appreciation*

Milk and milk-products companies	Calendar year—			
	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
Company no. 1	[3] 25.29	19.40	14.79	16.72
Company no. 2	27.98	9.45	9.31	5.19
2 companies, Baltimore [4]	25.58	18.14	14.01	14.90
Company no. 3	[3] 8.47	[3] 2.88	5.10	7.10
Company no. 4	28.17	2.67	16.79	22.01
Company no. 5	21.44	6.75	15.41	13.34
Company no. 6	17.41	5.93	10.26	12.29
4 companies, Cincinnati [4]	13.07	[5] .02	8.52	10.00
Company no. 7	26.03	5.68	5.24	[3] 3.14
Company no. 8	13.86	2.16	1.90	[5] 8.51
Company no. 9	18.66	3.44	[5] .98	.00
3 companies, St. Louis [4]	19.45	3.72	.47	[5] 2.79
Company no. 10	22.91	16.38	7.76	14.33
Company no. 11	13.02	3.45	[5] 11.75	[5] .08
2 companies, Boston [4]	20.50	13.27	3.28	11.39

[1] Before any deduction for Federal income tax.
[2] For 1 company the fiscal year ending Feb. 28 was used.
[3] Calendar year 1931.
[4] Weighted average.
[5] Indicates rate of loss.

Some companies recorded on their books the amount of goodwill paid for which was usually the excess cost of property acquired over the cost of that property to predecessor owners. The total amount of goodwill was equal to 23.86 percent of the combined recorded capital of the 7 companies and equal to 17.25 percent of the combined recorded capital of the 11 companies. The proportion of goodwill to the total recorded capital of each of the 7 companies is shown in the following tabulation:

Company no. and locality	Percent of the goodwill paid for to the total recorded capital	Percent of the goodwill resulting from recording of appreciation to the total recorded capital	Percent of the total goodwill at Dec. 31, 1935, to the total recorded capital
1. Baltimore	7.36	36.23	43.59
2. Baltimore	31.48	38.33	69.81
4. Cincinnati	----------	16.54	16.54
6. Cincinnati	17.72	8.27	25.99
7. St. Louis	3.63	----------	3.63
10. Boston	6.60	----------	6.60
11. Boston	42.28	----------	42.28
Total, 7 companies	11.94	11.92	23.86
Total, 11 companies	8.64	8.61	17.25

Four companies examined had no recorded goodwill. In other words, the recorded assets represented only tangible property used in the milk business. Therefore, in order to show comparable rates

of return for the 11 companies all goodwill whether paid for or not, together with all other unrealized appreciation have been eliminated from the third basis previously referred to, which thus covers only tangible assets employed in the milk business. It is significant to note that the milk companies examined did not amortize the recorded goodwill although many of the customers acquired when the properties of a company were acquired have been lost to the company. If the goodwill accounts had been reduced by current provisions for amortization, deducted from income or suplus, a large part of the recorded goodwill would have been removed from the books of these companies.

The rates of return on the investment in milk and milk-products business exclusive of appreciation and all goodwill, are shown in the following table:

TABLE 25.—*Comparative statement showing rates of return [1] of milk and milk-product companies, examined, for the calendar years [2] 1930, 1933, 1934, and 1935, based on the capital invested in milk and milk-products business after eliminating all appreciation and goodwill*

Milk and milk-products companies	Calendar year—			
	1930	1933	1934	1935
	Percent	*Percent*	*Percent*	*Percent*
Company no. 1	[3] 31.79	23.48	17.15	19.79
Company no. 2	86.00	24.61	23.64	13.34
2 companies, Baltimore [4]	34.31	23.55	17.62	19.27
Company no. 3	[3] 8.47	[3] 2.88	5.10	7.10
Company no. 4	28.17	2.67	16.79	22.01
Company no. 5	21.44	6.75	15.41	13.34
Company no. 6	23.12	7.09	12.47	15.13
4 companies, Cincinnati [4]	13.25	[5] .02	8.65	10.15
Company no. 7	26.76	5.88	5.43	[5] 3.25
Company no. 8	13.86	2.16	1.90	[5] 8.51
Company no. 9	18.66	3.44	[5] .98	.00
3 companies, St. Louis [4]	19.57	3.75	.47	[5] 2.82
Company no. 10	24.67	17.86	8.47	15.51
Company no. 11	20.68	5.93	[3] 21.35	[5] .14
2 companies, Boston [4]	23.95	15.86	3.94	13.49

[1] Before any deductions for Federal income tax.
[2] For 1 company the fiscal year ending Feb. 28 was used.
[3] Calendar year 1931.
[4] Weighted average.
[5] Indicates rate of loss.

Based on the foregoing tabulations and text relating to rates of return on the investment in the milk business, some general conclusions are given. It is obvious that the higher rates of return on the capital invested in the milk business than on the total capital indicate that the milk business was comparatively more profitable than the outside investment. All of these companies, except for one in Cincinnati, had rates of return of over 13 percent in 1930. For one company in Baltimore, three in Cincinnati, and one in Boston the year 1935 was rather profitable, but all companies in St. Louis, one in Boston, and one in Cincinnati had much lower rates of return than the other companies. The rates of return for the companies in Baltimore and Boston were lowest in 1934, whereas in 1933 the rates were

lowest for the companies in Cincinnati and in 1935 the rates were the lowest for the companies in St. Louis.

In this investigation the Commission has made no attempt to pass upon the fair value of the tangible or intangible property and equipment nor does it attempt to pass upon what constitutes a reasonable rate of return. Nevertheless, it should not be overlooked in considering these rates of return that there are oftentimes monopolistic elements in the business and public regulation thereof that justify a critical attitude with respect to the rates of return. This report is accordingly confined to a presentation of the rates earned. For reasons previously given in the text, computations of the rates of return were made on several bases, including capital recorded on the books and capital actually invested which was determined by eliminating recorded appreciation not paid for in cash or equivalent.

CHAPTER V. COSTS OF DELIVERING MILK AND RELATED PRODUCTS

INTRODUCTION

Data relative to the quantities of milk, cream, and other commodities delivered on retail and wholesale milk routes and relative to delivery expenses in connection therewith were obtained from 7 milk distributors divided among 3 milksheds. Time did not permit the gathering of information from a greater number of distributors. In order not to disclose the identity of these seven distributors, they are designated in this text discussion as distributor A, distributor B, etc.; and the milkshed in which a distributor operates is not indicated. In the detailed discussion of their respective methods of assigning selling and delivery expense to the respective commodities, which is presented in appendix G, these seven distributors are given other identity-concealing designations.

Extent of data gathered and presented.—Data were obtained from each of these seven distributors for each month separately of the 18 months, July 1934 to December 1935, inclusive. These data distinguish sales made on retail milk routes, on wholesale milk routes, and other sales; and they also include the selling and delivery expenses for each of the 18 months.

In this connection, it is pertinent to point out that not all of the sales made on retail routes consist of sales at retail prices. In the case of one distributor, for example, approximately 4,000 small stores received deliveries of milk, cream, and other products from retail delivery vehicles, but in wholesale quantities and at wholesale prices. This is due to the fact that it is more convenient and economical to meet deliveries to small stores and lunch counters from retail delivery vehicles regularly passing those establishments than it is to extend wholesale delivery routes so as to include those establishments. A similar situation prevails with certain other distributors. In the case of another distributor, the great bulk of the deliveries of milk, cream, and related products at wholesale is made on wholesale delivery routes. Even in this case, however, a few stores and lunch counters in outlying sections receive wholesale deliveries from retail delivery vehicles.

While data were obtained from each of the seven distributors for each of the 18 designated months, the data for only 1 month could

be worked up for presentation because of the extreme shortness of the time allowed for the purpose. The month of October 1935 was chosen so as to harmonize with the presentation of data obtained in other phases of this inquiry.

Great variety of commodities distributed from retail milk vehicles.—The task of assigning delivery expense to the respective commodities handled by a milk distributor on delivery vehicles is by no means a simple one, due to the great variety of commodities and packages transported on and delivered from these vehicles. Table 26, which follows, illustrates this fact strikingly.

TABLE 26.—*Commodities delivered on retail routes by milk distributor C, and total and unit delivery expense thereof, by commodities and sizes of package, October 1935*

Commodities	Sales units		Delivery expense		
	Name	Delivered	Total	Per unit	Per quart
				Cents	*Cents*
Pasteurized milk in bulk	Gallon	48	$3.10	6.46	1.61
Pasteurized milk in bottles	Quart	1,433,278	67,230.69	4.69	4.69
Do	Pint	105,788	3,763.86	3.56	7.12
Do	½ pint	7,740	264.30	3.41	13.66
Total pasteurized milk		1,546,854	71,261.95		4.79
Special brand milk in bottles	Quart	6,520	305.83	4.69	4.69
Do	Pint	61	2.17	3.56	7.12
Total special brand		6,581	308.00		4.70
Certified milk:					
Grade S in bottles	Quart	5,194	243.63	4.69	4.69
Do	Pint	633	22.52	3.56	7.12
Grade T in bottles	Quart	1,150	53.94	4.69	4.69
Do	Pint	94	3.34+	3.56	7.12
High test milk:					
Grade U in bottles	Quart	176,542	8,281.05	4.69	4.69
Do	Pint	13,317	473.81	3.56	7.12
Do	½ pint	1,616	55.18+	3.41	13.66
Grade V in bottles	Quart	19,989	937.62	4.69	4.69
Do	Pint	356	12.67−	3.56	7.12
Total certified and high-test milk		218,891	10,083.76		4.79
Total milk		1,772,326	81,653.71		4.79
Skim milk in bulk	Gallon	189	12.21	6.46	1.61
Pasteurized cream:					
34 percent in bulk	Gallon	9	.57+	6.38	1.59
18 percent in bulk	do	2	.13−	6.38	1.59
15 percent in bulk	do	99	6.32−	6.38	1.59
40 percent in bottles	Pint	136	4.84−	3.56	7.12
Do	½ pint	1	.03+	3.41	13.66
34 percent in bottles	Quart	108	5.07−	4.69	4.69
Do	Pint	13,941	496.01	3.56	7.12
Do	½ pint	22,151	756.40	3.41	13.66
24 percent in bottles	Quart	353	16.56	4.69	4.69
Do	Pint	35,503	1,263.17	3.56	7.12
Do	½ pint	176,204	6,016.90	3.41	13.66
Do	¼ pint	14,894	502.66	3.37	27.00
18 percent in bottles	Quart	11	.52	4.69	4.69
15 percent in bottles	do	2,683	125.85	4.69	4.69
Total sweet cream		266,095	9,195.03		11.52

TABLE 26.—*Commodities delivered on retail routes by milk distributor C, and total and unit delivery expense thereof, by commodities and sizes of package, October 1935*—Continued

Commodities	Sales units		Delivery expense		
	Name	Delivered	Total	Per unit	Per quart
				Cents	*Cents*
Sour cream:					
20 percent in bulk	Gallon	1	$0.06+	6.37	1.59
Do	½ gallon	35	1.35	3.86	1.93
Do	Quart	11	.35	3.16	3.16
20 percent in jars	10-ounce	1,204	33.40	2.77	[1] 8.88
20 percent in bottles	Pint	1	.04−	3.56	7.12
Total sour cream		1,252	35.20		7.62
Special beverages:					
In bulk	Gallon	108	6.98	6.46	1.78
In bottles	Quart	7,228	339.04	4.69	4.69
Do	½ pint	5,391	184.09	3.41	13.66
Do	½ quart	6	.21+	3.56	10.67
Lactose in bottles	Quart	17,414	816.84	4.69	4.69
Do	Pint	2,601	92.54	3.56	7.12
Synthetic buttermilk in bottles	Quart	32,702	1,533.95	4.69	4.69
Do	Pint	78	2.78−	3.56	7.12
Do	½ pint	139	4.75−	3.41	13.66
Natural buttermilk in bottles	Quart	18,440	864.96	4.69	4.69
Do	½ pint	12	.41	3.41	13.66
Cocoa drink in bottles	Quart	46,756	2,193.18	4.69	4.69
Do	Pint	4,703	167.33	3.56	7.12
Do	½ pint	18,144	619.57	3.41	13.66
Cottage cheese in bulk	Gallon	11	.57−	5.15	1.29
Do	½ gallon	28	1.08	3.86	1.93
Do	Quart	66	2.08	3.15	3.15
Cottage cheese in jars	16-ounce	11,483	334.93	2.92	[1] 5.83
Creamed cheese in bulk	Gallon	2	.10+	5.15	1.29
Do	½ gallon	14	.54	3.86	1.93
Do	Quart	9	.28	3.15	3.15
Creamed cheese in packages	10-ounce	12,640	350.64	2.77	[1] 8.83
Special cheese in bulk	Quart	1	.03+	3.15	3.15
Special cheese in packages	8-ounce	14,740	401.56	2.72	[1] 10.90
Butter in packages	Pound	86,077	2,447.04	2.84	[1] 5.69
Do	½ pound	35,945	961.70	2.68	[1] 10.70
Acidophilus milk in bottles	Quart	398	18.67	4.69	4.69
Do	Pint	117	4.16	3.56	7.12
Total by- and other products		315,253	11,350.01		
Grand total		2,355,115	[2] 102,246.16		

[1] Computed on the basis that 1 quart equals 32 ounces.
[2] This total omits $2.54 of expense assigned to miscellaneous items omitted from the table.

In the foregoing table showing the commodities delivered on retail routes by milk distributor C, one can count 63 different sales units or kinds of package divided among 19 different classes or grades of commodity. Inclusive of acidophilous milk, there are 17 different sales units for milk alone, and these are divided among 7 different grades of milk. Inclusive of sour cream, there are 19 different sales units or kinds of package of cream divided among 6 different grades of cream. The list of commodities also includes nine classes of commodities other than milk or cream, most of these being offered in two or more sizes of package. Even this does not represent the greatest extreme of variety, however, for other distributors include eggs, several varieties of bread, and even honey among the commodities sold from milk-distributing vehicles.

Fortunately, however, the variety of packages handled is, physically speaking, not nearly so great as the variety of sales units; for identically the same size and shape of quart bottle, for example, is used for

all grades of milk, all grades of cream, buttermilk, cocoa drink, and other beverages that are distributed in quart bottles. Similar remarks apply to the products put up in pint bottles and half-pint bottles.

Assigning delivery expense a complex problem.—Ponder the fact that this great variety of commodity and size and shape of package is carried on the same milk delivery vehicle and is handled by the same route man in moving from the vehicle to the customers' doorsteps and back. The complexity and difficulty of assigning to each of these varieties of commodity and to each of these varieties of package its appropriate expense immediately becomes apparent. The transportation expense is a joint expense. It begins when the loaded vehicle leaves the loading platform at the milk distributor's plant and continues while the vehicle moves to the beginning of the milk route, continues further as the vehicle moves along the route (even as the vehicle remains stationary while the route man moves into the customer's premises and back—if it is a motor vehicle with the motor left running); and until the vehicle has returned to the plant with the empty carrying cases and the empty bottles that have been gathered from the customers' premises. This transportation expense includes not only the cost of the gasoline, oil, lubricants, maintenance, tire expense, garage expense, depreciation of investment, license expense, tax expense, etc., pertaining to the motor vehicle, or the entire wagon and stable expense in the case of a horse-drawn vehicle, but also a large part of the value of the time of the chauffeur or driver—that part consumed while on the route. Serving these products from the vehicle to the customers also involves a joint expense. The route man picks out of his respective cases and cartons the various-sized bottles of milk, cream and other bottled products, packages of butter, eggs, etc., and places them in his carrier. In the process of loading these various items into the carriers, each item may consume time and effort individually; but the amounts and values of these individual handling efforts have never been recorded. And as the route man moves from the vehicle to the customer's doorstep, from the doorstep of one customer to that of another, and from a customer's premises back to the vehicle, the value of his time and effort during this process is joint to all of the commodities and packages in his carriers.

In the case of all seven distributors from whom data were obtained, the route man also keeps the record of deliveries to each customer on his route during the entire month, prepares the customer's monthly statement, makes the collections and remits and accounts to the milk distributor. Each variety of commodity and package delivered to each customer may involve individual effort in making the record and compiling the monthly bill; but the value of the route man's time in collecting the bill and in remitting and accounting to the milk distributor is an expense that is joint to all the commodities and packages handled during the month.

The process of ascertaining unit delivery costs pertaining to milk and other products delivered on milk routes is, therefore, a process of classifying delivery expense with reference to certain principles or bases of allocation or apportionment. Picture a milk vehicle loaded with these 19 classes of commodities, each commodity put up in various sizes of package and the packages of these respective sizes stored in carrying cases and cans of various sizes, weights, and shapes. How much of the transportation expense is caused by the milk that is in quart bottles stored and carried in quart-bottle cases? How much is caused by the milk in pint bottles stored and carried in pint-bottle cases? How much by the eggs in cartons, etc.? Picture the route man moving from his vehicle to the customer's premises with two carriers—these carriers containing ordinary milk in quart, in pint, and in half-pint bottles, cream in half-pint bottles, packages of butter, cartons of eggs. How much of the joint expense representing value of the route man's time as he moves from his vehicle to the house or from house to house, was caused by the milk in the quart bottles, how much by the milk in the pint bottles, how much by the cream in the half-pint bottles, how much by the packages of butter, how much by the carton of eggs? Picture a route man collecting a monthly bill, which sums up the net sales value of all milk, cream, butter, cottage cheese, cocoa drink, etc., in all the various sizes of packages in which these were delivered to a particular customer during the elapsed month. How much of the expense representing the value of his time, while making out and collecting this bill, was caused by the milk delivered in quart bottles, by the milk delivered in pint bottles, by the packages of butter, etc.?

Data were collected from seven milk distributors. Each of these seven distributors divided his total delivery and selling expense each month among the various varieties of commodity handled. Among these seven distributors four different methods of making this division were used. Not all four methods could possibly be right; so that at least three of the methods were incorrect—and it is believed that all four methods were incorrect in some phase or other. If the results obtained for distributor A were to be comparable with the results obtained for distributors B, C, D, etc., the same principles would have to be applied in a uniform method to the assignment of the expenses of each of these distributors to the various products sold by them. The results presented in this text are the results obtained by a uniform method determined by the Commission. This method is described in appendix G, as also is the particular method used by each of the distributors. Further space will not be taken up in this text with discussion of method.

Reverting to table 26, it will be noted that the cost of delivering a quart of milk in a quart bottle was 4.69 cents regardless of whether the milk was ordinary pasteurized milk or some special brand. The same amount, 4.69 cents, was the cost of delivering a quart of cream in a quart bottle, regardless of whether the cream had a butterfat content of 34, 24, 18, or 15 percent. The same cost applied to the delivery of a quart in a quart bottle of any of the other products that were delivered in bottles—special beverages, lactose, synthetic buttermilk, natural buttermilk, acidophilous milk and cocoa drink. In other words, this size of package would entail a delivery cost of 4.69 cents regardless of the nature of the contents of the package.

In a similar manner, the cost of delivering a pint of product in a pint bottle was 3.56 cents regardless of whether the product consisted of ordinary pasteurized milk, of some special grade of milk, of cream, or of any other material. And the cost of delivering a half pint of

any product in a half-pint bottle was 3.41 cents.[41] It will be observed that the cost of delivering a pint of any product in a pint bottle is much more than one-half of the cost of delivering a quart of the product in a quart bottle, and that the cost of delivering a half pint of product in a half-pint bottle is far greater than one-fourth of the cost of delivering a quart of the product in a quart bottle. This is due to the fact that in handling these various packages at the milk truck in the process of transferring them from the cases to the route man's carriers, in handling them at the customer's doorstep in the process of removing them from the carrier and placing them on the customer's doorstep and picking up empty bottles and placing them in the carrier, and in many other phases of work incident to the actual delivery operation and in the accounting therefor, practically no more time, effort, and expense are involved in handling a quart package than in handling a pint or a half-pint package.

Expressed in terms of quarts of product delivered, the cost of delivering milk, cream, and other products in bulk was about 1.61 cents, in quart bottles 4.69 cents, in pint bottles 7.12 cents, and in half-pint bottles 13.66 cents per quart. It is thus seen that delivery of these products in small bottles is relatively very expensive as compared with the cost of delivery in quart bottles. Due to the fact that the great bulk of all ordinary pasteurized milk that was delivered was delivered in quart bottles, the average cost of delivering pasteurized milk for all sizes of bottles was 4.79 cents per quart; and that same average applied to all milk, whether ordinary pasteurized milk or milk of other grades. The great bulk of sweet cream, however, was delivered in half-pint bottles; so that the average cost of delivering sweet cream was 11.52 cents per quart or about 2.88 cents per half pint.

Inasmuch as this inquiry is concerned primarily with milk and cream, not butter, orange drink, cocoa drink, and a variety of other commodities, the further discussion will concern itself with the presentation of only the costs of delivering milk and cream.

Unit delivery costs of seven milk distributors.—Table 27, which follows, presents the average costs incurred by seven milk distributors in the process of delivering milk and cream in various sized packages and units during October 1935. It shows the delivery cost per gallon, per quart, per pint, and per half pint; and it also shows for each size of container the cost of delivering a quart of the product in such containers.

[41] The table shows variations of 1/100 point percent in these respective unit costs. These variations are due to variations in the effect of rounding off decimals.

TABLE 27.—*7 milk distributors' expense per sales unit and per quart equivalent of delivering milk and cream on retail routes by sales units, October 1935*

Unit of sale	Distributor A		Distributor B		Distributor C		Distributor D		Distributor E		Distributor F		Distributor G	
	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart
Milk:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Ordinary pasteurized:														
Gallon	3.25	0.81	5.75	1.44	6.46	1.61	6.37	1.59	6.37	1.59	4.84	1.21	4.90	1.23
Quart	2.64	2.64	4.42	4.42	4.69	4.69	4.71	4.71	4.78	4.78	3.70	3.70	3.75	3.75
Pint	1.67	3.34	2.89	5.78	3.86	7.72	3.03	6.06	3.44	6.89	2.23	4.46	2.77	5.54
½ pint	1.67	6.68	2.77	11.07	3.41	13.66	3.02	12.06	3.15	12.59	2.29	9.18	2.32	9.29
Weighted average	2.83	----	4.67	----	4.79	----	4.79	----	4.95	----	4.25	----	3.98	----
Special grades:														
Quart	2.64	2.64	4.42	4.42	4.69	4.69	4.71	4.71	4.78	4.78	3.70	3.70	3.75	3.75
Pint	1.67	3.34	2.77	5.54	3.41	6.82	3.02	6.04	3.15	6.30	2.23	4.46	2.77	5.54
½ pint			2.77	11.07	3.41	13.66	3.02	12.06	3.15	12.59	2.29	9.18	2.32	9.29
Weighted average	2.74	----	4.70	----	4.79	----	5.23	----	5.11	----	3.90	----	4.03	----
Cream:														
15 to 20 percent:														
Gallon	3.25	.81	5.75	1.44	6.38	1.59	----	----	6.37	1.59	----	----	4.90	1.23
Quart	2.64	2.64	4.42	4.42	4.69	4.69	4.71	4.71	4.78	4.78	3.70	3.70	3.75	3.75
Pint			2.77	5.54	----	----	3.03	6.06	3.44	6.89	2.23	4.46	2.77	5.54
½ pint	1.67	6.68	2.77	11.07	----	----	3.02	12.06	3.15	12.59	2.29	9.18	2.32	9.29
¼ pint	1.48	11.84	----	----	----	----	----	----	----	----	----	----	----	----
22 to 30 percent:														
Gallon	3.25	.81	5.75	1.44	6.38	1.59	----	----	6.37	1.59	----	----	4.90	1.23
Quart	2.64	2.64	4.42	4.42	4.69	4.69	4.71	4.71	4.78	4.78	3.70	3.70	3.75	3.75
Pint			2.89	5.78	3.86	7.72	3.03	6.06	3.44	6.89	2.23	4.46	2.77	5.54
½ pint	1.67	6.68	2.77	11.07	3.41	13.66	3.02	12.06	3.15	12.59	2.29	9.18	2.32	9.29
¼ pint	1.48	11.84	----	----	----	----	----	----	----	----	----	----	----	----
32 to 40 percent:														
Gallon	3.25	.81	----	----	6.38	1.59	----	----	----	----	----	----	4.90	1.23
Quart	2.64	2.64	----	----	4.69	4.69	----	----	----	----	----	----	----	----
Pint			----	----	3.86	7.72	----	----	----	----	----	----	----	----
½ pint	1.67	6.68	----	----	3.41	13.66	----	----	----	----	----	----	----	----
Weighted average	6.70	----	10.10	----	11.52	----	9.70	----	10.68	----	8.04	----	5.78	----
Sour cream:														
Gallon	3.25	.81	----	----	6.38	1.59	----	----	----	----	----	----	----	----
½ pint			----	----	3.86	7.72	----	----	----	----	----	----	----	----
Quart			----	----	3.16	3.16	----	----	----	----	3.70	3.70	----	----
Pint			----	----	3.56	7.12	----	----	----	----	----	----	----	----
½ pint	1.67	6.68	2.47	9.87	----	----	----	----	----	----	2.04	8.15	----	----
10-ounce jars					2.77	1 8.88								
Weighted average	5.41	----	9.87	----	7.62	----	----	----	----	----	5.30	----	----	----

[1] Computed on basis that 1 quart equals 32 ounces.

According to the foregoing table, the cost of delivering a quart of milk or cream of any grade in quart bottles was 2.64 cents for distributor A, 4.42 cents for distributor B, 4.69 cents for distributor C, 4.71 cents for distributor D, 4.78 cents for distributor E, 3.70 cents for distributor F, and 3.75 cents for distributor G. The cost of delivering a pint of product in a pint bottle was 1.87 cents for distributor A, 3.28 cents for distributor B, etc. Converting all these delivery units to quart equivalents, the weighted average cost per quart of delivering ordinary pasteurized milk was 2.83 cents for distributor A, 4.57 cents for distributor B, 4.79 cents for distributor C, 4.97 cents for distributor D, 4.95 cents for distributor E, 4.25 cents for distributor F, and 3.93 cents for distributor G.

The average cost of delivering a half pint of sweet cream to the customer's doorstep was 1.57 cents for distributor A, 2.77 cents for distributor B, 3.41 cents for distributor C, etc. The cost of delivering cream in one-fourth-pint bottles was only a little less than the cost of delivery in half-pint bottles and, therefore, was relatively much more expensive; while the cost of delivering cream in pint and quart bottles was only a little more than the cost of delivering in half-pint bottles and, therefore, was relatively much less expensive. Due to the fact that the great bulk of sweet cream was delivered in half-pint bottles, the weighted average cost per quart of delivering sweet cream was 6.70 cents for distributor A, 10.10 cents for distributor B, 11.52 cents for distributor C, 9.76 cents for distributor D, 10.68 cents for distributor E, 8.04 cents for distributor F, and 5.78 cents for distributor G.

It will be observed that the delivery cost of any commodity in any size of unit varied greatly from distributor to distributor. There is a striking contrast between the unit delivery costs incurred by distributors B, C, D, and E on the one hand, and the corresponding delivery costs incurred by distributor A on the other hand, with distributor G occupying an intermediate position. A large part of this difference in unit costs is due to differences in methods of remunerating the route men, and to differences in restrictions imposed upon the distributor and his route men by the route men's union. Distributor A is not affected by union restrictions. He pays his route men a small guaranteed weekly stipend; but the great bulk of their remuneration consists of a "commission" equal to 7 percent of the net sales value of the products delivered by them. These route men earn an average of about $31 per week; but in doing so they must each deliver a relatively large volume of products. This distributor is, therefore, able to effect delivery at a relatively low unit cost.

In contrast with the above-described system of remuneration, certain other of these distributors are subject to the following conditions: All regular route men are paid a guaranteed wage of $36 per week of 6 days; a substitute route man operates the route on the seventh day and receives a remuneration of from $6 to $7—making the total minimum for a route equal to $42 or $43 per week. For this amount of remuneration, the route men deliver not more than 200 "points" per day. For this purpose a quart bottle of milk constitutes 1 point, a pint bottle constitutes one-half point, a half-pint bottle constitutes one-fourth point, a quart of cream constitutes 4 points, a pint of cream 2 points and a half pint of cream 1 point. Other point values attach to milk and cream delivered in bulk and to other products. On all deliveries in excess of 200 points per day the route man receives an additional compensation, called "commission", amounting to 0.4 cent per point. The service rendered for this compensation, inclusive of guaranteed weekly wage and "commission", does not include delivery of butter, eggs, or cheese. For delivering these products from retail route vehicles, the route men receive additional compensation equal to 1 cent per pound for butter, 1 cent per dozen for eggs, and 1 cent per pound for cheese. For delivery of these commodities from wholesale route vehicles the route men receive "commission" at the rate of ½ cent per dozen for eggs and ½ cent per pound for cheese. The commissions based on the excess of points delivered over 200 points per day are paid on a monthly basis. That is, for a 30-day month, the commissions would be on the excess of points delivered over 6,000 points; for a 31-day month, the commissions are paid on the excess of the points delivered over 6,200 points; and for a 28-day month the commissions are paid on the excess of the points delivered over 5,600 points. This requirement entails the accounting work not only of computing and compiling the deliveries made by each route man but also of converting those deliveries into "points".

The milk distributors in another market are subject to the following conditions established in agreement with the union: A minimum guaranteed weekly wage of $36 for 6 days on retail routes with 10 days' vacation per year with full pay. Substitute drivers, who operate the milk routes on the seventh day, are compensated at the rate of $42 per week. This makes a minimum wage cost of $43 per week per route. The service to be rendered for this compensation amounts to 6,250 "points" per month. For deliveries in excess of that amount, the regular route man receives a "commission" amounting to 1 cent per excess point. For the purpose of administering this provision, one point consists of 1 quart of milk, 2 pints of milk, a half pint of cream, 2 quarter pints of cream, 1 quart of cultured whole milk, 1 quart of buttermilk, 1 pound of butter, 1 pound of cheese, 4 half pints of milk. A quart of certified milk constitutes 2 points; a quart of cream constitutes 4 points; a pint of cream constitutes 2 points; a gallon of bulk milk constitutes 4 points; a gallon of condensed cream constitutes 4 points; and a gallon of bulk cream constitutes 6 points.

The foregoing limitations apply to the compensation paid to retail route men and the service to be rendered by them for such compensation. A similar set of limitations apply on wholesale routes.

The effects of these differences in rates and methods of remunerating retail route operatives are reflected in the average labor cost per retail route. These averages for the respective distributors were as follows in October 1935: Distributor A, $166.97; distributor B, $212.41; distributor C, $231.02; distributor D, $235.48; distributor E, $239.70; distributor F, $201.50; and distributor G, $193.22. It will be observed that these variations in the average labor cost per retail route correlate closely with the variations in the average cost per quart equivalent of delivering milk.

Another factor that causes the unit delivery expense for distributor A to be less than the unit delivery expenses of the other six distributors is the fact that distributor A serves a much larger number of stores and lunch counters from retail delivery vehicles. These

deliveries are in wholesale quantities and are made at wholesale prices. The latter fact is reflected in the remuneration received by the retail route operatives, inasmuch as the great bulk of their remuneration consists of a 7-percent commission on net sales. Likewise the handling of these wholesale deliveries from the vehicle to the customer's premises is less expensive than the handling of a like quantity between the vehicle and the premises of retail consumers. Thus a large proportion of the apparent retail delivery expense of distributor A consists in fact of wholesale delivery expenses—probably a considerably larger proportion than in the case of the other distributors.

Lack of data for more accurate assignment of delivery expense.—In the process of apportioning the delivery expenses and arriving at the unit costs presented in the foregoing table (table 27), there was included with the vehicle expense to constitute the total cost of transporting the commodities in route vehicles an amount equal to 27.45 percent of the total remuneration paid to route men operating horse-drawn vehicles and 29.59 percent of the total remuneration paid to route men operating motor vehicles.[42] These percentages were the results of careful time studies made on the retail-delivery routes of a certain large milk distributor by a member of the Commission's staff before he entered the Commission's service. The percentages probably are not strictly applicable to the case of any distributor from whom data were obtained in this inquiry. However, the brevity of available time did not permit time studies to be made on the delivery routes of distributors included in the present inquiry. Furthermore, although the above-stated percentages may not be applicable strictly, they are applicable approximately; and it is believed that their use yields results closer to the true unit costs than could have been obtained if no part of the route men's remuneration had been assigned to transportation cost so as to be apportioned to the respective products and packages on the cubic-space basis.

In order to obtain unit costs that should be comparable with those presented in the first report on this inquiry, computations were also made without assigning any portion of the route operatives' remuneration to transportation cost. These results are presented in appendix table 13. The failure to include this element in transportation cost has the effect of understating slightly the unit costs of delivering the larger packages (gallons and quarts) and of overstating appreciably the unit costs of delivering the smaller packages (pints, half pints, gills, 16-ounce jars, and 8-ounce jars). For example, table 27 above shows for distributor A a cost of 3.42 cents per gallon for delivering milk, cream, and other fluid products in bulk, and of 2.64 cents per quart for delivering them in quart bottles, as compared with 3.03 cents and 2.56 cents respectively shown in appendix table 13. On the other hand, table 27 shows only 1.87 cents per pint, 1.57 cents per half pint and 1.48 cents per gill for delivering these fluid products in bottles of those respective sizes. These may be compared with 1.96 cents, 1.73 cents, and 1.66 cents respectively shown for the sizes of package in appendix table 13. Similar comparisons hold in the cases of the other distributors. The whole comparison emphasizes the importance—to the milk distributors for their own guidance as well as for

[42] In those cases in which the remunerations paid to these two classes of route operatives were not stated separately, there was applied to their total an average percentage, which was derived in each case by weighting the above stated percentages with the number of horse routes and the number of motor routes, respectively.

purposes of discussion with milk consumers and milk producers—of making these route and other studies that will furnish practical working bases on which to allocate and group expenses according to the manner in which they impinge upon these products and to apportion these expenses to the respective classes of product and package according to the correct apportionment principle that pertains to each expense group.

Either set of results, however, shows strikingly the expensiveness of delivering these products in small packages. A cost of 1.87 cents per pint for delivering milk in pint bottles, is equivalent to 3.74 cents per quart. A cost of 1.57 cents per half pint for delivering milk in half-pint bottles is equivalent to a cost of 6.26 cents per quart. These were the results for distributor A, who had the lowest costs. For distributor E, whose costs were among the highest, a cost of 3.44 cents per pint for delivering milk in pint bottles is equivalent to a cost of 6.89 cents per quart, and a cost of 3.15 cents to deliver a half pint of milk in a half-pint bottle is equivalent to a cost of 12.59 cents per quart. These higher costs for delivery in small packages, perhaps, explain why some distributors charge a price of from 1 to 2 cents more per quart for milk delivered in pint bottles and from 3 to 8 cents more per quart for milk delivered in half-pint bottles than for milk delivered in quart bottles. Fortunately, from the expense viewpoint, the great proportion of all fluid milk is still delivered in quart bottles; so that the weighted average cost per quart of delivering all milk is only a little above the cost of milk delivered in quart bottles.

Costs of delivering milk and cream on wholesale delivery routes.—By a similar process, the total expenses pertaining to deliveries from wholesale routes were classified and apportioned to the respective commodities delivered on wholesale routes and to the respective sales units or packages of those commodities. The results for milk and cream are presented in table 28 following:

TABLE 28.—*7 milk distributors' expenses per sales unit and per quart-equivalent of delivering milk and cream on wholesale routes, by sales units, October 1935*

	Unit of sale	Distributor A—delivery cost		Distributor B—delivery cost		Distributor C—delivery cost		Distributor D—delivery cost		Distributor E—delivery cost		Distributor F—delivery cost		Distributor G—delivery cost	
		Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart
		Cents	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Milk:															
Ordinary pasteurized	Gallon	2.35	0.59	2.03	0.51	3.06	0.77	1.70	0.42	2.23	0.56	2.62	0.65	3.33	0.83
Do	Quart	1.86	1.86	1.67	1.67	2.35	2.35	1.24	1.24	1.73	1.73	2.01	2.01	2.35	2.35
Do	Pint	1.26	2.53	1.37	2.74	1.89	3.79	.85	1.70	1.30	2.60	1.49	2.99	1.50	3.01
Do	½ pint	1.03	4.10	1.24	4.94	1.84	7.34	.77	3.06	1.21	4.83	1.26	5.04	1.12	4.49
Do	⅓ quart					1.89	5.68								
Average per quart-equivalent			1.86		1.99		2.52		1.17		1.63		2.05		1.47
Special	Gallon														
Do	Quart	1.86	1.86	1.67	1.67	2.35	2.35	1.24	1.24	1.73	1.73	2.00	2.00	2.35	2.35
Do	Pint	1.26	2.53	1.37	2.73	1.89	3.79	.85	1.70	1.30	2.60	1.50	3.00	1.50	3.00
Do	½ pint			1.24	4.94	1.84	7.34	.77	3.06						
Do	⅓ quart					1.89	5.68								
Average per quart-equivalent			2.29		3.43		2.52		2.58		2.27		2.21		2.44
Cream:															
15-20 percent	Gallon	2.35	.59	2.03	.51	3.02	.76	1.70	.42	2.23	.56	2.62	.65	3.33	.83
Do	Quart	1.86	1.86	1.67	1.67	2.35	2.35	1.24	1.24	1.73	1.73	2.01	2.01	2.35	2.35
Do	Pint			1.37	2.74			.85	1.70	1.30	2.60	1.50	3.00	1.50	3.02
Do	½ pint	1.03	4.10	1.24	4.94			.77	3.06	1.21	4.83	1.26	5.03	1.12	4.50
Do	¼ pint	.96	7.65												
22-30 percent	Gallon	2.35	.59	2.05	.51	3.03	.76	1.70	.42					3.33	.83
Do	Quart	1.86	1.86	1.67	1.67	2.35	2.35	1.24	1.24	1.73	1.73	2.01	2.01	2.35	2.35
Do	Pint			1.38	2.75	1.89	3.79	.85	1.70	1.31	2.61	1.57	3.14	1.51	3.00
Do	½ pint	1.03	4.10	1.24	4.94	1.84	7.34	.77	2.96	1.20	4.82	1.28	5.13	1.12	4.44
Do	¼ pint	.96	7.65			1.82	14.56								
32-40 percent	Gallon	2.35	.59			3.03	.76					2.62	.66		
Do	Quart	1.87	1.87			2.35	2.35					2.00	2.00		
Do	Pint					1.89	3.79								
Do	½ pint	1.03	4.10			1.84	7.34								
Average per quart equivalent			.81		1.00		5.62		.69		1.42		.80		.90

Sour cream	Gallon					3.03	.76					2.62	.66		
Do	¼ gallon					2.01	1.01								
Do	Pint					1.67	3.33								
Do	Quart					1.75	1.75					2.00	2.00		
Do	½ pint	1.02	4.09												
Do	½-pint jars			1.15	4.62										
Do	10-ounce jars.					1.58	5.04					1.15	4.61		
Average per quart-equivalent							.99						.74		

The foregoing table shows that the cost of delivering milk and cream in quart bottles on wholesale delivery routes ranged from 1.24 to 2.35 cents per quart. The cost of delivering these commodities in pint bottles ranged from 0.85 to 1.89 cents per pint; and the cost of delivering them in half-pint bottles ranged from 0.77 to 1.84 cents per half pint.

Expressing the milk and cream that was delivered in the various sizes of package or sales unit in terms of quart equivalents, the weighted average cost of delivering ordinary pasteurized milk on wholesale routes ranged from 1.17 to 2.52 cents per quart. The weighted average cost of delivering sweet cream on wholesale routes ranged from 0.69 to 5.62 cents per quart equivalent. Expressed in costs per half pint of cream, the weighted average cost ranged from 0.17 to 1.41 cents per half pint. The principal cause of the largest average unit cost was the overwhelming preponderance of the cream that was delivered in half-pint bottles.

It will be recalled that distributor A showed the lowest average unit cost for delivery of milk and cream on retail routes. The lowest average costs of delivering milk and cream on wholesale routes were not achieved by distributor A: Distributors D and E both had lower unit costs on wholesale routes. The important explanation of this has already been cited in the discussion of retail delivery unit costs. A large portion of deliveries of milk and cream at wholesale by distributor A is actually made on retail routes; so that not only are the quantities so delivered counted among the deliveries on retail routes but the delivery expenses pertaining to these wholesale deliveries are included and submerged in the so-called retail delivery expenses. This has the important effect of leaving a much reduced volume of deliveries counted as wholesale deliveries over which to apportion the overhead expenses of the wholesale delivery department. No criticism of this distributor is intended in these comments. However, the effect of this distributor's system of deliveries and the necessary concomitant method of accounting therefor, is to understate somewhat the average unit expense of true retail deliveries and to overstate somewhat the average unit expense of wholesale deliveries

By direction of the Commission.

CHARLES H. MARCH,
Chairman.

JUNE 4, 1936.

APPENDIX

APPENDIX A. DESCRIPTION OF PLAN FOR PAYING PRODUCER MEMBERS OF CONSOLIDATED DAIRIES, INC.

Assume that one of our members lives 196 miles from Boston. This is in the 20th zone, 191–200 miles, according to the new milk rate schedules. Under the old plan it would have been the 10th zone. It is the average distance from which milk is sent to Boston.

This member has a rating of 200 pounds daily and he delivered at the country receiving station of his dealer an average of 250 pounds daily in November. We will assume, for ease in figuring, that his milk averaged a 3.7-percent test for the month. His milk check would be figured by the dealer in accordance with directions received from the office of the milk director, Frederic S. Snyder. The process would be as follows:

November Price, 20th Zone

Boston delivered price		$3.0225
Freight, station charge, and can service		.7103
At country station		$2.3122
Charge, Director's office		.01
Class 1 price		$2.3022
Adjustment to sales (93.2% $2.0322)		$2.1456
Class 2 price:		
Average butter	24.52	
Add 20%	4.90	
Butterfat fine	29.4	
Per cwt. 3.7 milk: 29.4 by 3.7		$1.0878
Class 2 within ratings: 6.8% of $1.0878		0.074
For milk within ratings		$2.2196
Service charges		.10
Net price		$2.1198

The Boston delivered price for Class I milk is 6½ cents a quart or $3.0225 per hundred. From this price must be deducted the cost of getting the milk from the time it is delivered at the country receiving station until it arrives in the city. There are three deductions—freight, station charge and can service.

Delivered price		$3.0225
Freight	0.4478	
Station charge	.2325	
Can service	.03	
Total cost	.7103	.7103
At receiving station door		$2.3122

From this price we must take the expense of conducting the director's office, including the cost of auditing dealers' books. This producers' share of the cost is one cent a hundred. Taking this out the 20th zone price for Class I milk stands at $2.3022.

This would be the price of rated milk provided that sales equaled ratings. Records in the director's office show that total sales were only 93.2 percent of total ratings. * * * So only 93.2 percent of the $2.3022 could be paid for milk within ratings or $2.1456.

The Class 2 price was figured in accordance with the following formula, stated in the Federal Control Marketing Agreement: "Average of the daily quotations issued by the U. S. D. of A. Bureau of Agricultural Economics for 92 score fresh butter at Boston plus 20 percent."

	Cents
Average butter quotation	24. 52
Add 20 percent	4. 9
Per lb. butterfat	29. 4

Class 2 price (29.4 cents times 3.7) equals $1.0878.

Our member had 6.8 percent of his rated milk still left to be paid for at the Class 2 price. This gave him an additional 7.40 cents a hundred (6.8 percent times $1.0885). Adding this to the $2.1456 gave a price of $2.2198 for all milk delivered within ratings.

From this price total deductions of 10 cents a hundred were taken as follows:

	Cents
Creamery purchase assessment	. 06
Consolidated Dairies operating expense	. 01
N. E. M. P. A. dues	. 02
N. E. M. P. A. benefit fund	. 01
Total	. 10

This gives a final price of $2.1198, or practically $2.12 a hundred for all rated milk.

For any milk shipped in excess of ratings producers receive the Class 2 price, 98.8 cents ($1.0885, less the 10-percent deduction) but with no deductions for station charge, freight or can service.

Our member living in the 20th zone received for 3.7 milk delivered in November $132.57. His average daily deliveries of milk were 250 pounds. This is 7,000 pounds for the 28 days in which the Federal Marketing Agreement was in effect (Nov. 3 to 30). Of this amount 5,600 was milk within ratings and 1,400 was milk in excess of ratings. His return would be:

5,600 at $2.12	$118. 72
1,400 at 98.9	13. 85
	$132. 57

This is a price of $1.89 for all milk delivered. This is a little more than some other producers may have received for all their milk but it should be remembered that he was delivering only 25 percent in excess of his ratings, whereas the producers as a whole were delivering about 35 percent excess. He had adjusted his production and it brought him a better composite price.

The final price which he received for Class I milk within ratings was exactly the same as it would have been if he had been paid for 186.4 pounds daily (93.2 percent of 200-pound rating). He would have received exactly the same amount if his rating had been reduced to 186.4 pounds to equal the sales.

The important thing to remember is that he was paid for his full share of the sales in the market, just as were all other producers. For that share he got the same price as other producers. This is the equalization of sales which we now have, for the first time, covering all the market under the Boston marketing agreement. Without regard to the fact that the price for Class I and for Class II was higher than it would have been, there is a very great gain in the protection of the producers' price through this equalization.

APPENDIX B. MARKET ADMINISTRATOR FOR THE GREATER BOSTON MARKETING AREA

Uniform prices for 3.7 milk, by zones, Feb. 9–15, 1936

	Prices per hundredweight for producers with bases	
	Blended price for milk not in excess of base	Class II price for milk in excess of base
For milk delivered to plants located within 40 miles of the Statehouse in Boston:		
1. From farms located within 40 miles of the Statehouse in Boston	$3. 30	$1. 666
2. From farms located more than 40 miles from the Statehouse in Boston	2. 859	1. 666
For milk delivered to plants located more than 40 miles from the Statehouse in Boston, as follows:		
Zone: Miles		
5 — 41–50	2. 414	1. 606
6 — 51–60	2. 402	1. 606
7 — 61–70	2. 396	1. 606
8 — 71–80	2. 384	1. 606
9 — 81–90	2. 378	1. 606
10 — 91–100	2. 367	1. 606
11 — 101–110	2. 361	1. 606
12 — 111–120	2. 355	1. 606
13 — 121–130	2. 343	1. 606
14 — 131–140	2. 331	1. 606
15 — 141–150	2. 331	1. 606
16 — 151–160	2. 314	1. 606
17 — 161–170	2. 314	1. 606
18 — 171–180	2. 308	1. 606
19 — 181–190	2. 296	1. 606
20 — 191–200	2. 284	1. 606
21 — 201–210	2. 284	1. 606
22 — 211–220	2. 273	1. 606
23 — 221–230	2. 267	1. 606
24 — 231–240	2. 261	1. 606
25 — 241–250	2. 261	1. 606
26 — 251–260	2. 249	1. 606
27 — 261–270	2. 243	1. 606
28 — 271–280	2. 237	1. 606
29 — 281–290	2. 237	1. 606
30 — 291–300	2. 226	1. 606

Producers without bases are to be paid the Class II price for all milk.

From the above prices, the following deductions are to be made:

Members of qualified associations (Art. IX, Sec. 2) (such deductions as are authorized by members). Nonmembers (Art. IX, Sec. 1) 5 cents per hundredweight of all milk. U. S. D. of A. weighted average price f. o. b. Boston of 40 percent cream of bottling quality for February 9–15, 1936, $16.015.

B. F. differential for each 1/10 of 1% variation from 3.7 test, $0.041.

MARKET ADMINISTRATOR—GREATER BOSTON, MASS., MARKETING AREA

Extracts from the computations which resulted in the uniform prices announced for the February 9–15, 1936, period (Art. VII, Sec. 2, Par. 7)

Art. VII, Sec. 2:	
Par. 1. Total of the respective values of milk	$331, 111. 59
2. Total net amount of the differentials applicable pursuant to Sec. 4 of Art. VIII	43, 533. 28
Total	374, 644. 87
3. Total amount to be paid to producers pursuant to pars. 2, 3, and 4 of Sec. 1 of Art. VIII	46, 658. 96
Total	327, 985. 91

Extracts from the computations which resulted in the uniform prices announced for the February 9–15, 1936, period (Art. VII, Sec. 2, Par. 7)—Continued

Art. VII, Sec. 2—Continued.	
Par. 4. Total base milk delivered, except that delivered from farms located within, to plants located within, 40 miles of the statehouse in Boston (pounds)	$12, 197, 233
Blended price per hundredweight	$2. 689
5. Deduction for the purpose of retaining a cash balance	. 040
Basic blended price from which zone prices are calculated	$2. 649
Art. VIII, Sec. 4:	
Par. 2. Differential to be added to determine the blended price to be paid to a producer for milk not in excess of his base which is delivered from a farm located more than 40 miles, to a handler's plant located within 40 miles, of the statehouse in Boston	. 210
	$2. 859
Basic blended price, as above	$2. 649
Art. VIII, Sec. 4:	
Par. 1. Carlot freight rate per cwt. (considering 85 pounds of milk per can) for zone 5	. 2353
Blended price to be paid to a producer for milk not in excess of his base which is delivered to a handler's plant located between 41 and 50 miles from Boston	$2. 414

(The blended prices to be paid to producers for milk not in excess of their respective bases which is delivered at handler's plants located more than 50 miles from Boston are determined in the above manner by deducting from the basic blended price ($2.649) the C. L. freight rate per cwt. to Boston from the zone in which the handler's plant is located.)

	Pounds of milk		
	Total	Percent	Daily average
Total receipts reported	14, 717, 767	100. 00	2, 102, 538
Milk reported not in excess of base	12, 559, 119	85. 33	1, 794, 160
Net Class I sales reported	8, 176, 005	55. 55	1, 168, 001
% sales to base	65. 10		

Source: Office of the Market Administrator, room 701, 80 Federal St., Boston, Mass., Mar. 4, 1936.

Appendix C. Agreement Between the Cincinnati Sales Association and Milk Distributors

THIS AGREEMENT made and entered into as of the 1st day of July 1935, between the Cincinnati Sales Association, hereinafter called the Association, acting by and through its Pooling Committee, and the undersigned corporations, firms, and individuals, all of whom are milk distributors within the Cincinnati milk-marketing area, hereinafter called distributors, WITNESSETH:

In consideration of the mutual agreements herein contained and in further consideration of the benefits to be derived by the Distributors, signatory to this agreement, and the producer associations and milk producers whose milk is being handled by the Cincinnati Sales Association, the parties hereto agree as follows:

1. The Cincinnati market sales area shall be defined as follows: All cities, towns, and suburban areas in Hamilton and Butler Counties, except Middletown and Oxford, and the town of Milford in Clermont County.

2. Distributors agree to purchase through the Association and the Association agrees to sell to the Distributors all of the milk required by said Distributors for Class 1, Class 1–a, and Class 2 uses, and in addition thereto such quantity of Class 3 milk up to 20% of the total quantity of milk used by such Distributors in Class 1, Class 1–a, and Class 2 uses as the Distributor shall require. When necessary to meet the requirements of the individual Distributor for Class 3 milk as provided herein, milk shall be obtained either by transfer from some other Distributor when such transfer is agreeable to such other Distributor, or in such other way as the Association shall determine.

Class 1 milk shall be that sold for bottled and bulk milk both plain and flavored for fluid consumption, standardized on a basis of 4.0% butterfat.

Class 1–a milk shall be that sold to recognized relief agencies approved by the Pooling Committee of the Cincinnati Sales Association or on orders signed by representatives of the recognized relief agencies so approved for bottled and bulk milk both plain and flavored for fluid consumption, standardized on a basis of 4.0% butterfat.

Class 2 milk shall be that sold for bottled and bulk cream, bottled and bulk buttermilk, and cottage cheese for fluid consumption, standardized on a basis of 4.0% butterfat.

Class 3 milk shall be the remainder of the milk not sold as Class 1, Class 1–a, or Class 2 within the basic quantity and the quantity received in excess of base.

The price to be paid by the Distributors to the Association for base milk per cwt. of 4.0% butterfat shall be determined by totaling the values of the quantities sold as Class 1, Class 1–a, and Class 2, and the quantity within the base of Class 3, at the following prices f. o. b. Distributors' platform: Class 1 milk, $2.40; Class 1–a milk, $1.80; Class 2 milk, $1.65; Class 3 milk to be determined currently by the Pooling Committee of the Association.

The Pooling Committee may request bids from manufacturers within the area or if able to dispose of Class 3 milk to better advantage, by shipping to other markets or selling to ice cream or butter manufacturers, it may do so. The price of Class 3 milk shall be not less than 4.0 times the average price of 92 score Chicago butter for the month.

The price for Class 1, Class 1–a, and Class 2 is subject to a butterfat differential of three (3) cents for each 1/10 of 1% butterfat above or below 4% whenever the price for Chicago 92 score butter is below thirty (30) cents per pound. Whenever Chicago 92 score butter is thirty (30) cents or over, the differential shall be four (4) cents for each 1/10 of 1%.

Each distributor shall report to the Pooling Committee by the 10th of each month the previous month's purchases and sales of milk on forms to be provided by the Pooling Committee. In arriving at the price for base milk, the total of all the sales of all the Distributors shall be used in determining percentages of Class 1, Class 1–a, Class 2, and Class 3 milk.

There shall be an allowable margin for plant loss of 2½% of the total quantity of butterfat received by each Distributor, which percentage shall be paid for as Class 3. All other unaccountable milk (or butterfat) shall be classified as Class 2, unless proof is presented that the milk (or butterfat) has been used in a higher classification, in which case it shall be paid for on the basis of the class in which actually used. Four (4) or more samples of milk or cream taken at weekly intervals shall constitute sufficient proof of such usage.

Purchase and use reports shall be sent to the Pooling Committee by all Distributors by the 10th of each month, and shall be summarized by the Pooling Committee determining the percent of use in each class for each Distributor. The percentages and prices of different classes for the market shall then be totaled by the Pooling Committee and the average price for base milk and excess milk for the market shall then be determined.

The Pooling Committee shall also determine the average price to be paid by each Distributor on the basis of the class sales of such Distributors. This determination shall be made by the Pooling Committee not later than the 15th day of the month. All Distributors shall be notified immediately of their average price as determined by the Pooling Committee and the average price for the market.

The Distributors shall severally maintain systems of accounting which shall accurately reflect the true classification of their sales of milk products. Auditors of the Pooling Committee shall have the right during usual business hours, to enter all plants and have access to the books and records of the Distributors pertaining to the matters upon which reports of said Distributors were made, to verify the accuracy of said reports.

The Distributors shall advance to the producers from whom they receive their milk, one ($1.00) dollar per 100 pounds of milk shipped during the month. The advance may be made weekly or bi-weekly as the Distributor shall determine.

Each Distributor shall remit to the Pooling Committee within 5 days of notification from the Pooling Committee the net balance between the advance of one ($1.00) dollar and his average price. The prices set forth herein may be changed from time to time by agreement between the Association and the Distributors handling more than two-thirds of the milk handled by the Distributors signatory to this agreement and the prices so agreed upon shall then become part of this agreement and constitute a modification of the prices set forth herein. The Association shall arrange for the proper sampling, weighing and testing.

3. The Distributors shall pay to the Pooling Committee of the Association one (1¢) cent per 100 pounds of all milk purchased by them during the preceding month, for the purpose of defraying the expenses of the Association and the Committee. In addition to this payment, the Distributors shall pay one (1¢) cent per 100 pounds of all Base Milk purchased by them during the preceding month, to the Cincinnati Dairy Council.

4. Distributors agree to observe and abide by the schedule of minimum prices for the retail and wholesale selling of milk as are set forth in Schedule A, attached hereto and made a part hereof.

5. The Distributors agree to observe and abide by the quantity discounts from wholesale prices as are set forth in Schedule B, attached hereto and made a part hereof.

6. The Distributors agree to abide by and observe the rules of fair practice set forth in Schedule C, attached hereto and made a part hereof.

7. The Distributors shall select a committee to be called the Distributors' Committee consisting of not more than seven members. The manner of selecting the members of the Distributors' Committee shall be determined by the Distributors but there shall be at least one representative from each of the following Distributors and associations on said committee:

Hamilton, Ohio, Milk Dealers.
French Bros. Bauer Co.
Matthews-Frechtling Co.
The Kroger Co.
The Cincinnati Milk Exchange.
The Independent Milk Dealers Association.

The Distributors' Committee shall have the authority to represent the Distributors in all dealings with the Association or the Pooling Committee and in such other matters as may be determined from time to time by the Distributors.

The Chief Auditor selected by the Association for the purpose of calculating the pool shall be approved by the Distributors' Committee, and all books and records concerning the pool calculations shall be open at all times for inspection by a certified public accountant to be selected by the Distributors' Committee. All information obtained by the Auditor of the Association, his assistants, or by any accountant selected by the Distributors' Committee shall be held confidential and shall not be disclosed by such persons.

8. The aggregated total of all delivered base milk of all producers shipping to the pool shall be maintained as near as possible at 115% of the total quantity of milk sold in the market for Class 1, Class 1–a, and Class 2 uses. The Pooling Committee shall revise the producers bases every 3 months so as to maintain this percentage.

9. This agreement shall become effective upon being signed by the Association and by Distributors handling not less than 90% of the fluid milk in the market, as of the 1st day of July, 1935, and may be terminated by any of the parties hereto upon giving sixty (60) days' notice in writing to all other parties signatory hereto, said notice to be mailed to the principal place of business or the office of said parties, but the termination of this agreement by one or more Distributors shall not affect or cancel the agreement or obligation of the remaining parties to the contract. This agreement is issued in a number of identical copies and the signature of any party to any one copy shall constitute signature to the general agreement.

In Witness Whereof, The Cincinnati Sales Association, acting by and through its Pooling Committee, and the undersigned Distributors, acting by and through their proper officers duly authorized hereunto, have signed this agreement on the day and year set opposite the signature of each party.

The Cincinnati Sales Association.

By ——— ———

Date of signature: ———.

Schedule A.—*Schedule of minimum selling prices, effective on and after the 1st day of July 1935*

RETAIL PRICES AND GROCERY CHARGE AND/OR DELIVERY SALES PRICES

	Percent B. F.	Qts.	Pts.	½ Pts.
Milk Standardized	3.5 to 4.0	$0.12	$0.08	
Special Milk Standardized	4.5 to 4.7	.14	.09	
Milk, Whole	4.0 or less	.12	.08	
Milk, Whole	Over 4.0, less than 4.2	.13	.09	
Milk, Whole	Over 4.2	.14	.09	
Certified Milk		.18	.10	
Inspected Milk		.18	.10	
Lactic Milk	3.7		.10	
Acidophilus Milk			.18	
Skim Milk		.07		
Buttermilk, Plain	.5	.09		
Buttermilk, Creamed	3 to 3.2	.13		
Cream, Single (sweet or sour)	18 to 20	.56	.28	$0.14
Cream, Double	30 to 32	.92	.46	.23
Cottage Cheese, Creamed	4 to 4.5	.14 jar		
Chocolate Drink	1.5	.12		

Note.—Above minimum prices apply to Vitamin D Milk in above Butterfat standards.

GROCERY CASH-AND-CARRY RESALE PRICES

	Percent B. F.	Qts.	Pts.	½ Pts.
Milk, Standardized	3.5 to 4.0	$0.11	$0.07	
Special Milk Standardized	4.5 to 4.7	.13	.08	
Milk, Whole	4.0 or less	.11	.07	
Milk, Whole	Over 4.0, less than 4.2	.12	.08	
Milk, Whole	Over 4.2	.13	.08	
Cream, Single (sweet or sour)	18 to 20			$0.13
Cream, Double	30 to 32			.22
Buttermilk, Plain	.5	.08		
Buttermilk, Creamed	3.0 to 3.2	.12		
Cottage cheese, Creamed	4.0 to 4.5	.13 jar		

WHOLESALE PRICES

	Percent B. F.	2 Gals. or more	Qts.	Pts.	½ Pts.
Milk Standardized	3.5 to 4.0	$0.33	$0.10	$0.06	$0.03½
Special Milk Standardized	4.5 to 4.7		.12	.07	.03¾
Milk, Whole	4.0 or less	.33	.10	.06	.03½
Milk, Whole	Over 4.0, less than 4.2		.11	.07	.03¾
Milk, Whole	Over 4.2		.12	.07	.03¾
Cream, Single (sweet or sour)	18 to 20	1.20	.35	.20	.12
Cream, Double	30 to 32	1.90	.50	.35	.21
Buttermilk, Plain	.5	.15	.07	.04	.03
Buttermilk, Creamed	3 to 3.2	.22	.11	.06	.03½
Skim Milk		.12			
Chocolate Drink	1.5				.03½
Cottage Cheese, Creamed	4.0 to 4.5	.12 jar			
Cottage Cheese, Creamed	4.0 to 4.5	.10 5 or 10 lb container, 10¢ per lb.			
Cottage Cheese, Dry Curd				8¢ per lb.	

SCHEDULE B

The following quantity discounts off wholesale prices shall be allowed to hotels, restaurants, hospitals, schools, and other institutions where milk purchases represent one account as follows:

Purchases:	*Discount*
(a) Where milk purchases aggregate at least $400 and not more than $700 in a month	2%
(b) Where milk purchases aggregate more than $700 and not more than $1,000 in a month	3%
(c) Where milk purchases aggregate more than $1,000 in a month	4%

Quantity discount to retail stores under one ownership which buy milk to amounts aggregating $1,000 or more in any month, 2% off wholesale prices.

SCHEDULE C. RULES OF FAIR PRACTICES

The following practices are considered unfair and shall not be engaged in by the milk distributors or by their officers, employees, or agents:

It shall be considered unfair practice:

1. To sell or offer for sale milk or milk products of any other grade other than those listed in Schedule A, until said grade and the price at which it is to be sold has been approved by the Distributors' Committee.

2. To give rebates or discounts from list prices to any buyer or class of buyers, except as provided in Schedule B, or as may be provided for by special arrangement with the Distributors' Committee.

3. To give samples of any products.

4. To sell products which misrepresent the trade article.

5. To exchange goods, except on Mondays or on a day immediately following a holiday.

6. To lend money or in any manner extend financial assistance to a customer or prospective customer, wholesale or retail.

7. To give, lend, sell, or furnish ice boxes, ice, exterior signs or any like thing, except that ice may be furnished to schools and factories to preserve dairy products until lunch hour.

8. To decorate or redecorate any place or thing for a customer or prospective customer.

9. To give or to pay any hotel, restaurant, apartment or factory owners, managers, janitors, receiving clerks, maids, housekeepers, linen-room attendants, moving and real-estate companies or agents or any other persons, money, compensation, gratuity, free milk or any other milk products, free service or discounts to secure business or testimonials.

10. To sell or offer for sale at wholesale or retail, any milk for fluid consumption at a price less than that stated in Schedule A, whether by any discount, rebate, free service, premium, special inducements, novelties, calendars or advertising allowance, or a combined price for such milk together with another commodity, whether sold or offered for sale separately or otherwise.

11. To employ an advertising agency or agencies for special house to house soliciting campaigns.

12. To employ groups of temporary employees for soliciting purposes.

13. To offer any inducements to churches or like organizations for new customers.

14. To offer or give to employees prizes or bonuses for new customers.

15. To advertise in any program, periodical or other publication, other than newspapers having a regular daily, weekly, or monthly circulation.

16. To place individual advertisements or advertising in telephone directories, hotel registries, circulars, handbills, cards or other like things except advertising pamphlets, bottle collars, breed association literature or bottle caps, or other literature distributed by and/or for a milk distributor.

17. To make any donation of Dairy Products to any social, religious, charitable, political, civic or other benefit organization, except where such donations are given collectively to any organization with all other distributors. It is understood that the Wholesale Price shall apply on purchases of milk and dairy products by the types of organizations listed above.

18. To put on a route without sufficient business to constitute a route (150 points to constitute a route), but this shall not apply to the initial route or routes of a new milk dealer.

19. To solicit business on the basis of time of delivery.

20. To use any bottle, can, case, or other container, the title of which is vested in any other person.

21. To sell milk in bottles or other containers except in bottles or other containers on which is blown or otherwise noted the seller's name and which is sealed with a cap or other cover likewise bearing said name. Retail stores which purchase milk from a distributor shall be exempt from the application of this item; and milk sold to such retail stores shall be in "store bottles" for which a charge shall be made for bottles for which an empty "store bottle" is not given in return as follows: Quarts, 5¢; Pints, 5¢; Half-Pints, 3¢.

22. To hire any employee who is at the time being in the employ of another milk dealer, or to offer to employ any person as a reward for soliciting and securing business.

23. To sell to any broker or peddler not now in business.

24. To permit any employee to sell or solicit, or sell to a Broker who wishes to sell or solicit in a territory which within the preceding 6 months he has covered in any capacity for any other milk dealer.

25. To continue to deliver milk to any person who sells milk at prices less than the applicable or schedule of prices set forth in Schedule A.

26. To sell milk over the counter at milk dealer's plant other than at the retail price to the ultimate consumer.

27. To make regular daily special deliveries to retail customers.

28. To use any special caps, vending machines, home service devices, or other like things not already in general use in the Cincinnati Market Sales area unless the approval of the Distributors Committee shall have first been obtained.

29. To serve refreshments at milk plants other than milk products.

30. To pay visitors either directly or indirectly to visit dealers' plant.

31. To sell any new products unless 10 days' notice shall have been given to the Distributors Committee of such proposed sale, and the prices, terms, conditions of such sale shall have been approved by the Distributors Committee.

32. To make deliveries to retail stops or grocers before 7 a. m. or after 3 p. m. in Metropolitan Cincinnati and Hamilton between the dates of October 1 and May 31, except on Christmas and New Years; or before 6 a. m. and after 2 p. m. between the dates of June 1 and September 30, except Labor Day.

Any violation of any of these rules should be reported promptly to the Secretary.

Appendix D. The Consumers' Milk Commission of St. Louis

August 6, 1930.
November 1, 1934.

The Fact-Finding Committee presents the following report:

ORIGIN OF THE COMMISSION

The Consumers' Milk Commission came into being on March 3, 1930, as a result of a meeting called by the Sanitary Milk Producers' Association, Inc., at the Statler Hotel at which it was stated that the dairymen who produced the supply of milk for St. Louis were in a very serious condition, which seemed likely to be reflected in the quality of milk delivered to St. Louis.

The Fact-Finding Committee appointed on April 8 undertook to investigate and determine the facts in the situation, with a view toward making any recommendations which might seem advisable in order to maintain a high grade of milk for consumers in St. Louis.

AIM OF FACT-FINDING COMMITTEE

The Fact-Finding Committee did not accept the hypothesis set up by the producers' Organization, and then collect the facts to prove it. They informed themselves by means of authoritative pamphlets and books; they secured information and help from members of the faculties of the agricultural colleges of Missouri and Illinois; and from the dairy economist of the Federal Farm Board who was sent here from Washington; they received valuable aid from farm advisers in all the counties of the territory; and they took testimony from the producers and distributors themselves.

The committee made several trips into Missouri and Illinois, inquiring into the conditions of the producers by conference in their territory. One member of the committee made a first-hand study of the situation in three eastern markets where dealers and producers cooperate, and reports were made to the commission by persons familiar with similar plans in the middle west.

The distributors helped the Committee members to an understanding of the receiving and distribution of milk by arranging inspection trips to their stations and plants.

Although the sanitary quality of the milk was the primary consideration in the study, it was recognized at the outset that consumers who, thru their department of health, regulate the sanitary conditions under which the farmer produces milk, must feel the responsibility for the economic conditions which are necessary if he is to meet these requirements.

SITUATION IN THE ST. LOUIS MARKET

To the view of the Commission when it started to work, the market presented, on the one hand, a few large firms distributing 85% of the milk consumed in St. Louis, with nearly forty smaller dealers distributing the other 15% and, on the

other hand, approximately 12,000 farmers supplying this milk, each with a few cows, each disposing separately of his milk at the price offered him. These farmers, usually working general farms with dairying a side line, are scattered thru at least twenty counties of Missouri and Illinois, some of them 150 miles from the city. Time-honored methods still in use by many of the farmers result in an oversupply of milk at certain periods of the year, which, in turn, has a tendency to reduce the price paid for the product. The amount of time and labor necessary to produce this milk is enormous, and the laborers include the farmer, his wife, and his children.

Cleanliness, according to modern standards for milk, takes time, and also demands improvements which many of the farmers have not had the money to obtain.

The individual farmer feels himself at a disadvantage, not only in the matter of price, but also in lack of knowledge of market information, of credit ratings of distributors, and in the matter of the weighing and testing of his product, which is entirely in the hands of the distributors.

It can readily be seen that the distance from each other and from the distribution center are handicaps to intimate knowledge of the market situation, to the spread of knowledge of new methods and sanitary requirements, and to cooperative effort of any kind. It is hardly to be wondered at that a feeling of dissatisfaction has pervaded the producers, and that, in spite of the difficulties in the way of cooperation, efforts have been made to unite to improve their conditions, with the result that the Sanitary Milk Producers' Association, Inc., includes as members more than half of the milk producers in the district.

The distributors, on the other hand, have appeared generally satisfied with conditions as they are, with only an occasional doubt in regard to the situation. Price paid to the producer has been the same throughout the market, set apparently by common consent of the large dealers and accepted by the smaller. The distributors enjoyed dealing with the individual farmer; moreover, their past experience with producers in groups had not been satisfactory. Many felt themselves competent to educate their own producers in new methods and sanitary procedure. They seemed to have no qualms as to the wisdom of extending the milkshed when it was to their advantage to obtain milk from more distant sources.

However, as in the course of our conferences it has become apparent that the producers were acting in a fair and sincere manner, and that definite advantages to themselves and the market as a whole might result from working with the producers' association, the distributors have become more inclined toward a working agreement with the association. Objects common to the Sanitary Milk Producers and to the distributors are control of surplus, increase in consumption, and improvement of quality.

In addition, however, to these two sides of the picture, the Milk Commission saw a third important factor in the situation—the consumers. The commission felt not only that the consumer was entitled to good milk which should improve constantly in quality where improvement is possible, and a fair price, but also that the consumer desired this under conditions which brought no hardship to anyone concerned. It felt that the interest of the public in an article so important to the health and well-being of the consumer is more essential than in the case of other commodities, and that, therefore, the public should be represented in conferences dealing with milk.

In another way the consumer is vitally related to the problems of the milk market: upon his patronage depends the entire market. And the amount of his patronage has been shown elsewhere to be quite directly related to his confidence in the product. As the per-capita consumption of milk in St. Louis is generally accepted to be lower than in many cities, there would seem to be a probability of increasing consumption and therefore sales, and the two accepted methods of accomplishing this are—increasing confidence and by educating the consumer to the value of milk as a food.

The commission also became convinced that many of the sources of conflict in the milk marketing system would be eliminated by a system of collective bargaining, a method definitely encouraged by the U. S. Government as evidenced by the passage of the Agricultural Marketing Act. In the past such efforts have at times, perhaps frequently, been inaugurated with a feeling of suspicion and distrust on both sides and been marked by extravagance on one side or the other. The old idea of outwitting each other has in a large part been discarded in favor of a friendly attempt by distributors and producers to solve their mutual problems. In the present situation this has been the attitude successfully

maintained by producers, distributors, and consumers, and it is the belief of the Consumers' Commission that with the continuance of such a spirit, collective bargaining will be a success. In any plan for quality improvement, it is important to have the active cooperation of satisfied producers, which such a plan may in turn be a large factor in obtaining. In addition, the self-dependence engendered is much to be desired in any group of citizens.

There is general agreement, that while the quality of the milk in the St. Louis area can be improved, there is no reason for disturbing public confidence in it. On the other hand, that confidence is to be strengthened as improvements are effected. The chief agency of the public in obtaining a good quality of milk is the City Department of Health, which has the responsibility of enforcing the ordinance passed by the Board of Aldermen. A herd-certification system protects St. Louis' milk supply from the tuberculous cow, sufficient cooling is insured by tests made by the Department and the dealers, tests for bacteria are also made, and regulations are laid down regarding the sanitary procedure and equipment. The necessity for some of those regulations is little understood by the farmer, and the procuring of some of the equipment is a matter of both time and money. The cooperation, intelligent and informed, of the producer is necessary if these regulations are to be fully complied with, and intensive education must precede his wholehearted participation.

It has been constantly maintained during these conferences that St. Louis is, in normal times the center of a large supply of milk, and that moreover the city is located in a section where the milk production could be indefinitely increased, and the shed extended. It appears to the Commission that any such stimulation or extension may be unwise. A large district is difficult to inspect; new producers mean recurrent and extra effort of education, if pure milk is insured.

Furthermore, the lack of uniformity in production creates a large surplus. Surplus, from the standpoint of the dealer, is considered as milk in excess of fluid milk sales. The large dealers carry practically all the surplus milk for the market, for the magnitude of their business generally enables them to command the required capital for the manufacture of surplus milk. There is no escaping the fact that either directly or indirectly the amount of surplus milk in the market is reflected in the returns that the producer receives for his milk. In markets offering a flat price for all milk, prices are reduced roughly in proportion to increases in the amount of surplus. Since seasonable surplus is due to methods used by the farmers, it seems to the Commission that the best means of regulating production is a plan which will put the responsibility of even production of milk throughout the year upon the individual farmer.

The relation between the price paid to the farmer for milk and the cost to the farmer of producing the milk is difficult to establish. Few farmers keep cost accounts, and those who do are among the most thrifty and efficient producers, so that costs to the average producer are practically impossible to obtain. Estimates made by County Farm Advisers and by State University agricultural experts indicate that costs vary from one to seven dollars per cwt. It is obviously impossible to suggest a price to cover such diverse costs of production and leave a reasonable profit. Testimony of individual farmers, however, leaves no doubt in the collective mind of the Commission that very many if not most of them are receiving no profit on their milk and that many are losing money on it.

The Commission is convinced that the producer should receive more money for his product, but is not convinced that the increase should be met through higher prices to the consumer. It seems highly probable that a larger return may be secured by other means, already suggested as a working basis of agreement, that is, through one or all of the following: control of surplus, quality improvement, increase in consumption, decrease in distributors' expenses, particularly through economies in "collection to be effected by the producers' association."

The objectives of the Sanitary Milk Producers given to the Committee were as follows: Collective bargaining, surplus control, quality improvement, checking weights and tests, watching credit rating market information, increase of consumption.

METHODS OF WORK

On June 4, 1930, in the headquarters of the League of Women Voters, the first of the series of three conferences was held, attended by 18 persons representing dealers, producers and consumers, to consider the set-up of the Sanitary Milk Producers' organization, its objectives, and the dealers' reaction to the development of a marketing plan. On July 7 it was voted to resolve this group into a joint conference committee of nine, three representing the dealers, three the

producers, and three the consumers. The Pevely Dairy Company, whose representative had sat in at the previous meeting, but who had taken no part in the discussion, withdrew from the negotiations at this point. The conferees representing the dealers were Mr. B. M. Lide, Jr., Pres. of the St. Louis Dairy Co.; Mr. Bruno Tschannen, Pres. of the Highland Dairy Co.; H. W. Barr, Pres. of the Beatrice Creamery Co. Representing the Sanitary Milk Producers' Assn. were Mr. E. W. Tiedeman, Mr. A. D. Lynch, and Mr. George Grueninger. Representing the consumers were Mrs. Geo. Gellhorn, Mrs. W. W. Burke, and Mrs. Virgil Loeb. Mrs. Loeb was made chairman of the commission at the joint conference.

Four conferences, lasting from six to eight hours each, were held, and the marketing agreement and price plan attached hereto were adopted. The agreement provides a "basic and surplus" plan of buying milk from the producers along lines followed in many cities since 1918. Producers who failed to ship, are to be penalized for each month of failure, one-sixth of their established basic quantity.

For surplus milk, up to production of double their basic quantity, they are to pay, the average price of 92 score Chicago butter, which is published monthly by the U. S. Bureau of Markets, plus 20%.

Farmers who fail to produce from September 1st through December, but resume shipping in January and February are to be paid the first surplus price. That is to be cut down to the second surplus price if they fail to ship before March 1st, but the 20% is to be put on again for July and August.

Ultimately, the basic quantity is to be determined by the three consecutive months of lowest production, but in the meantime the agreement provided a plan for 1931 based on the percentage of total production accounted for by total sales of fluid milk, for the last six months of 1930. That percentage, applied to the individual production of each member of the Sanitary Milk Producers, will establish his basic quantity for 1931 and all the shipments over that amount will go at surplus prices.

For the remainder of 1930, in initiating the plan, the base is to be established for each month on the monthly proportion of sales to production, with sales as the base.

The basic and surplus plan is to go into effect in October, when the producer is to receive $2.40 per cwt. on the basic quantity for the bottle trade.

These prices apply to distributors joining in the agreement, who recognize the Sanitary Milk Producers as sales agents but only as a bargaining agency, not to go into manufacturing or distributing so long as both parties are dealing. No attempt is made to prevent dealers buying from producers outside the association at any price, except that it shall not be more than that paid members. No attempt is made to limit the territory from which dealers may draw their supply. Prices are to be based on milk testing 3.5 percent butterfat, with premium or penalty of 4 cents a 100 pounds on every 0.1% variance from 3.5.

Distributors are to pay the Association a 3-cent brokerage fee on every 100 pounds bought from its members after the basic and surplus plan goes into effect. The association is to pay a third of its brokerage fee to the local branch of the National Dairy Council to be formed here to foster quality production, efficient distribution and increased consumption. Considerable increases of consumption elsewhere under the basic and surplus plan incidentally, have been attributed chiefly to quality improvement.

The dealers are to equal the producers' contribution to the Dairy Council. They are to pay it an additional cent for every 100 pounds received from members of the Association, and 2¢ for every 100 pounds received from non-members. Further concessions to the Association are permission to examine the equipment used by the distributors in weighing and testing milk, and statements to the Association on the weight and butter contents of milk received from members.

"The association shall use its best efforts to prevent unfair trade practices in the St. Louis shed", stipulates the agreement, which concludes:

"Any of the four parties interested, that is, the distributors, manufacturers, Sanitary Milk Producers, Inc., or the Consumers' Milk Commission, reserves the right to ask for a conference to consider the situation if it feels its interests are being jeopardized thereby.

"Each distributor and the Association shall do all in their respective powers to bring about harmonious relations and stability of relations within the St. Louis milkshed for the mutual interests of the consumers, distributors, and producers, which is hereby recognized."

The agreement has been accepted by the larger dealers, with the sole exception of the Pevely Dairy Company, and its acceptance by the smaller dealers is confidently expected. If the Pevely Dairy Company does not cooperate with the other dealers, producers and consumers in the establishment of the National Dairy Council, its non-participation in this quality improvement program will put it in a rather indefensible position. It has been the experience in other cities that sometimes one large dealer has taken longer than the others to see the value of such a plan, as is here proposed, but that has not impaired the plan in other cities, nor will it delay its successful working out in St. Louis.

The Commission believes that the agreement means the beginning of a new era of good will between the distributors and producers in the St. Louis milkshed, and that it will be of benefit to all parties concerned. To the producers, it represents an opportunity to realize their aims; to the distributor it represents an opportunity for a stabilized market and reduction of surplus; the consumer, who pays the 13¢ for the quart of milk, is given a voice in its just distribution. And to the community as a whole, it means an improved milk supply, St. Louis taking its place with the other cities of the country in the establishment of an equitable and orderly marketing plan.

No plan is self-enforcing, however. It requires the good will and determination of the interested parties to make it a success. The Consumers' Milk Commission has a continuing responsibility which it accepts as a duty and privilege.

Respectfully submitted.

MRS. GEORGE GELLHORN,
MRS. W. W. BURKE,
MRS. VIRGIL LOEB, *Chairman*.

APPENDIX E. PROVISIONS OF BOSTON MILK LICENSE REGARDING CLASSIFICATION OF MILK

(Effective date, May 1, 1935)

ARTICLE IV. CLASSIFICATION OF MILK SALES AND USES

SECTION 1. *Primary Sales and Uses.*—Milk purchased or handled by distributors shall be classified according to its sale and use, as follows:

1. Class I milk means all milk sold or distributed by distributors as whole milk, chocolate milk, or flavored milk, for consumption or use in the Sales Area.

2. Class II milk means the quantity of milk purchased, sold, used, or distributed by distributors in excess of Class I milk, except as set forth in section 2.

SEC. 2. *Other Sales and Uses.*—Milk sold or distributed as milk or cream outside the Sales Area or sold to other distributors or persons whether within or without said Sales Area shall be classified as follows:

1. Milk sold in bulk as milk by a distributor who is also a producer to a distributor operating a bottling or processing plant, shall be accounted for as Class II milk by such selling distributor, and if such buying distributor uses or sells such milk for other than Class II purposes such buying distributor shall account to the Market Administrator for the difference between the value of such milk at the Class II price and the value of such milk at the Class I price according to its usage; such difference in value shall be added to the total value computed pursuant to paragraph 1, section 1, of article VIII.

2. Except as provided in paragraph 1 of this section milk sold or distributed by a distributor as milk (1) outside the Sales Area or (2) to another distributor or person, whether within or without the Sales Area, shall be accounted for by such selling distributor as Class I and Class II milk, respectively: *Provided:* That if such selling distributor, on or before the date fixed for filing reports pursuant to article VI, shall furnish to the Market Administrator satisfactory proof that such milk has been utilized for a purpose other than the sale or distribution for ultimate consumption or use as milk, then, and in that event, such milk shall be classified in accordance with such other use.

ARTICLE IV. CLASSIFICATION OF MILK

(Effective July 16, 1935)

SECTION 1. *Sales and Use Classification.*—Milk purchased or handled by distributors shall be classified according to its sale and use within and without the Sales Area, as follows:

1. Class I milk means all milk sold or distributed by distributors as whole milk, chocolate milk, or flavored milk, except as provided in section 2 of this article.

2. Class II milk means the quantity of milk purchased, sold, used or distributed by distributors in excess of Class I milk.

SECTION 2. *Sales to Other Distributors.*—Milk sold or distributed by a distributor as milk to another distributor, shall be accounted for by such selling distributor as class I milk: *Provided*, That if such selling distributor, on or before the date fixed for filing reports pursuant to article VI, shall furnish to the Market Administrator satisfactory proof that such milk has been used for purposes other than those set forth in paragraph 1 of section 1 of this article, then, and in that event, such milk shall be classified as Class II milk.

APPENDIX F. PROVISIONS OF ST. LOUIS AND BOSTON MILK AGREEMENTS AND LICENSES REGARDING DISTRIBUTOR REPORTS AND AUDITS

ST. LOUIS

(Marketing agreement, effective Nov. 22, 1933)

* * * * * * *

Section 3:

(6) The contracting producers and the contracting distributors shall severally maintain systems of accounting which shall accurately reflect the true account and condition of their respective businesses. Their respective books and records shall, during usual hours of business, be subject to the examination of the Secretary to assist him in the furtherance of his duties with respect to this agreement, including the verification by the Secretary of the information furnished on the forms hereinafter referred to. The contracting producers and the contracting distributors shall severally from time to time, furnish information to the Secretary on and in accordance with forms to be supplied by him.

* * * * * * *

(Effective Mar. 2, 1934)

Section II:

4. (*a*) The distributors shall severally, from time to time upon the request of the Secretary, furnish him with such information on and in accordance with forms of reports to be supplied by him for the purpose of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this License are being effectuated; such reports to be verified under oath. The secretary's determination as to the necessity of and the justification for the making of any reports, and the information called for thereby, shall be final and conclusive.

(*b*) For the same purposes and/or to enable the Secretary to verify the information furnished him of said forms and reports, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to the examination of the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

(*c*) The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

* * * * * * *

(Effective June 1, 1934)

* * * * * * *

Section II:

4. (*a*) The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, on and in accordance with forms of reports to be supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this License are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby, shall be final and conclusive.

(*b*) For the same purposes and/or to enable the Secretary to verify the information furnished him on said forms of reports, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to the examination of

the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

(*c*) The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

* * * * * * *

(Effective Aug. 14, 1934)

Part II:

3. (*a*) The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, in a manner prescribed by him and/or in accordance with forms of reports to be supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act, and the purpose of this License are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby, shall be final and conclusive.

(*b*) For the same purposes and/or to enable the Secretary to verify the information furnished him on said forms of reports, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to the examination of the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

(*c*) The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

* * * * * * *

ARTICLE XV. GENERAL PROVISIONS

(Effective Nov. 16, 1934)

* * * * * * *

SECTION 1. *Books and Records.*—The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

SEC. 2. *Reports.*—The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, in a manner prescribed by him and/or in accordance with forms of reports to be supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this license are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby, shall be final and conclusive.

SEC. 3. *Examination of Books and Records.*—For the same purposes as set forth in section 2 of this article and/or to enable the Secretary to verify information furnished him, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to examination by the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

* * * * * * *

ARTICLE XIV. GENERAL PROVISIONS

(Effective Mar. 4, 1935)

SECTION 1. *Books and Records.*—The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

SEC. 2. *Reports.*—The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, in a manner prescribed by him and/or in accordance with forms of reports to be

supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this License are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby shall be final and conclusive.

SEC. 3. *Examination of Books and Records.*—For the same purposes as set forth in section 2 of this article and/or to enable the Secretary to verify information furnished him, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to examination by the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

BOSTON

(Effective Nov. 3, 1933)

* * * * * * *

8. (*a*) The contracting producers and the contracting distributors shall severally maintain systems of accounting which shall accurately reflect the true account and conditions of their respective businesses. Their respective books and records shall, during usual hours of business, be subject to the examination of the Secretary (or his duly authorized representative) to assist him in the furtherance of his duties with respect to this agreement, including verification by the Secretary of the information furnished on the forms hereinafter referred to. The contracting producers and the contracting distributors shall severally from time to time furnish information to the Secretary on and in accordance with forms to be supplied by him.

(*b*) The respective books and records of the contracting producers and the contracting distributors shall, during usual hours of business, be subject to the examination of the director (or his duly authorized representative) to the extent necessary to permit the director to obtain the information required by him for the proper performance of his duties hereunder. All information obtained by or furnished to the director pursuant to the provisions of this agreement shall remain the confidential information of the director, except as provided in exhibit D, and shall not be disclosed by him except to the Secretary or to the Board of arbitration upon request, and except that the director shall combine and publish from time to time the information obtained from producers and/or distributors in the form of statistical studies or data pertaining to production, distribution, and other marketing conditions in the New England milkshed and the greater Boston market, and shall upon request furnish to each such producer or distributor a copy of the information obtained from the books of the requesting party.

* * * * * * *

(Effective Mar. 16, 1935)

* * * * * * *

4. (*a*) The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, on and in accordance with forms of reports to be supplied by him for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this License are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby shall be final and conclusive.

(*b*) For the same purposes and/or to enable the Secretary to verify the information furnished him on said forms of reports, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to the examination of the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

(*c*) The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

* * * * * * *

ARTICLE XV. GENERAL PROVISIONS

(Effective May 1, 1935)

SECTION 1. *Books and Records.*—The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

SEC. 2. *Reports.*—The distributors shall severally from time to time, upon the request of the Secretary, furnish him with such information as he may request, in a manner prescribed by him and/or in accordance with forms of reports to be supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this License are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby, shall be final and conclusive.

SEC. 3. *Examination of Books and Records.*—For the same purpose as set forth in section 2 of this article and/or to enable the Secretary to verify information furnished him, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to examination by the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

* * * * * * *

ARTICLE XV. GENERAL PROVISIONS

(Effective Feb. 24, 1935)

SECTION 1. *Books and Records.*—The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

SEC. 2. *Reports.*—The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, in a manner prescribed by him and/or in accordance with forms of reports to be supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the Act and the purpose of this License are being effectuated; such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby, shall be final and conclusive.

SEC. 3. *Examination of Books and Records.*—For the same purpose as set forth in section 2 of this article and/or to enable the Secretary to verify information furnished him, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor, shall, during the usual hours of business, be subject to examination by the Secretary. The secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

(Effective July 16, 1935)

* * * * * * *

ARTICLE XV. GENERAL PROVISIONS

SECTION 1. *Books and Records.*—The distributors and their respective affiliates and subsidiaries shall severally keep books and records which will clearly reflect all the financial transactions of their respective businesses and the financial condition thereof.

SEC. 2. *Reports.*—The distributors shall severally, from time to time, upon the request of the Secretary, furnish him with such information as he may request, in a manner prescribed by him and/or in accordance with forms of reports to be supplied by him, for the purposes of (1) assisting the Secretary in the furtherance of his powers and duties with respect to this License and/or (2) enabling the Secretary to ascertain and determine the extent to which the declared policy of the

Act and the purpose of this License are being effectuated, such reports to be verified under oath. The Secretary's determination as to the necessity of and the justification for the making of any such reports, and the information called for thereby, shall be final and conclusive.

SEC. 3. *Examination of Books and Records.*—For the same purposes as set forth in section 2 of this article, and/or to enable the secretary to verify information furnished him, all the books and records of each distributor and the books and records of the affiliates and subsidiaries of each distributor shall, during the usual hours of business, be subject to examination by the Secretary. The Secretary's determination as to the necessity of and the justification for any such examination shall be final and conclusive.

APPENDIX G. METHODS OF ALLOCATING DELIVERY COSTS TO PRODUCTS

In the investigation covered by this report, the Commission has again found that other than cost of raw materials, the greatest item of expense in the distribution of milk is the cost of delivery. As representative of such costs are the percentages and amounts in appendix table A, below:

APPENDIX TABLE A.—*Expenses other than raw materials expressed as percentage of total expenses* [1]

	1930	Percentage of total	1933	Percentage of total	1934	Percentage of total	1935	Percentage of total
Total expenses, exclusive of raw materials	$25,056,646		$16,385,449		$20,064,340		$20,396,900	
Processing	7,330,048	29.25	3,830,016	23.38	4,715,567	23.50	4,672,196	22.91
Delivery	14,447,918	57.66	10,283,161	62.76	12,522,614	62.41	12,970,726	63.59
Selling	1,593,433	6.36	1,167,180	7.12	1,458,883	7.27	1,417,312	6.95
Administrative and general	1,685,247	6.73	1,105,092	6.74	1,367,276	6.82	1,336,666	6.55

[1] For further details, see table 13.

One of the paramount questions relative to milk concerning the consumer, and, since the answer indirectly affects his income, the farmer as well, is: What does it cost to deliver a quart of milk? There have been a number of studies made in the past by both private, State, and Federal agencies, in an attempt to solve the question. No one of the many which have come to the commission's attention adequately analyzes the problem. The casual student of the industry is likely to be misled by the data usually handed him by the industry, not maybe because he lacks an understanding of the problems involved, but because he does not have access to the fundamental underlying data for study. Lacking these basic data, any results published as an answer to the problem concerning the delivery cost of a quart of milk are likely only to add to the confusion already evident.

The distributors, of course, present their expenses and unit delivery costs to the public by means of public hearings, investigations, and voluntary publicity; but after a careful study of some of the methods used in arriving at such unit costs, it is apparent that the results are valueless insofar as stating the true status of the situation is concerned. This is true not only from the public's viewpoint but as well from the dealer's, since it has been found that in the same organization, supposedly using the same method of computing unit costs, there were sufficient deviations in application of the theory of the method to render the results noncomparable. If it were true, as frequently stated, that a system giving adequate, accurate information would be too costly to install and operate, there might be some justification for the absence of adequate data; but it appears that the present methods in some cases are excessively costly and not justified, either from the consumer's or the producer's viewpoint. However, as related to the dealer's viewpoint, perhaps the present costly methods are justified. In the interests of the two other parties named, however, it would seem that a more simple, accurate, and inexpensive method could be devised.

At times distributors maintain that unit delivery costs are valueless from a practical standpoint and therefore are of no interest to them. Despite such protestations, however, extremely complicated methods, as will be evident later in the discussion, are employed to ascertain apparently unwanted results.

As to the question concerning the cost to deliver a quart of milk, the commission has used the respective companies' methods to compute this cost, as well as its own, using the dealer's total costs in each case so that comparisons are made possible, which will aid in finding an answer to the problem. It is believed that this is fair to the companies involved, because no question has been raised about any item of expense in their cost records, except in cases where delivery costs were included in a group designated either as selling, or selling and delivery. Where this occurred those items believed to be strictly selling were deducted, leaving a remainder which could reasonably be considered as delivery. Even when this was done, the commission's examiners consulted with representatives of the companies concerned so that there would be a common understanding of the matter.

As in other studies made of delivery expenses and their distribution to different products, the two major classes of sales have been considered, namely, retail sales and wholesale sales, and the method by which these sales reached their first destination after leaving the distributor's plant, otherwise commonly described as retail delivery and wholesale delivery. In the former class, the majority of deliveries are those made to the door of the ultimate consumer, while in the latter are those commonly delivered to stores, restaurants, lunch counters, and hotels. In accordance with these definitions, a careful effort has been made in every case on a retail route to include only the products sold at retail which were actually carried by the route vehicle. So-called retail sales are not all strictly retail, because some deliveries are at times made to stores. Where such stores are widely scattered the distributor may not consider it economical to deliver such products by wholesale vehicles, which are usually more costly to operate. In such instances, the distributors, from a practical standpoint of computing delivery costs, consider them as retail sales but make necessary adjustments in their sales ledgers for differences in retail and wholesale prices in the event that they are originally entered at full retail value. No attempt is usually made to show such sales separately in the accounts, and because of this, and likewise due to the lack of time and money, the commission has not attempted to eliminate such deliveries to stores.

From an operator's standpoint this is not necessary and would probably introduce an error, causing all other products to absorb the full expense of delivery despite the fact that they were actually delivered on the retail vehicles and therefore were a factor in creating a certain portion of the vehicle expense, as well as often affecting the driver's compensation. In Cincinnati it was found, for example, that the wholesale sales of this nature, except those in bulk, were given equal value with strictly retail sales in computing a driver's bonus and therefore a part of his compensation. Another exception is the stipulation of the driver's union that commissions on such products as butter, eggs, cheese, etc., were to vary according to whether such sales were retail or wholesale.[1] Despite the proviso, however, concerning bulk sales, which are defined as sales in gallons, one company still evaluates them on the same basis as retail sales in computing bonus points.[2] In St. Louis the drivers' union stipulates that such sales delivered by retail drivers shall receive equal value in computing the drivers' bonus.[3] Under such conditions, wholesale sales on retail routes may with reasonable accuracy absorb a portion of the retail delivery expense. There are other sales, of course, which distributors sometimes include in so-called retail classifications but which are in reality wholesale. On the other hand, certain sales may even be retail but do not reach their destination by use of the retail vehicles. In this classification are those made at the distributor's store, or directly from the platform, being called for by the purchaser. In order to obtain greater accuracy, these have been deducted by the Commission from the gross sales shown by the company records to obtain those quantities actually delivered and, accordingly, which should be charged with the costs of delivery. Where the distributor made no attempt to differentiate between retail deliveries and bona fide wholesale deliveries, such as those to restaurants, hotels, lunch counters, and customers of like character, they have been deducted from the gross quantities.

[1] Art. 3, articles of agreement, Dairy Products Drivers' and Helpers' Union, Local No. 98. An illustration of this point is that commissions on 1 pound of butter and also on 1 dozen eggs at retail are 1 cent, and at wholesale, ½ cent.

[2] Used in this sense, a "point" is simply a convenient term to designate a unit. Each product sold is evaluated in these units, some being equal to less than 1, 1, or more than 1 unit. Roughly, 1 quart bottle of milk is 1 point. All products are converted to these points, and in Cincinnati a retail driver is given, in addition to his union stipulated guaranteed salary, $\frac{1}{10}$ cent per point over a daily average of 200. (Ibid.)

[3] Art. 16, articles of agreement, June 22, 1935, to May 31, 1938, Milk Wagon Drivers' Union, Local No. 603.

As to bona fide wholesale sales, it was found that even in this classification were included some sales not actually delivered. Again, in such instances they were deducted from gross quantities. Therefore, in both retail and wholesale sales, it is believed that those expenses pertaining to the two classes named bearing directly on the process of delivery are as accurately as possible given full and reasonable consideration.

In the following discussion of the methods used by distributors to allocate delivery costs to products, only those having to do with retail delivery are considered. Reference is several times made to the wholesale methods, but only to emphasize some particular point. While detailed discussion of the latter methods would undoubtedly be valuable, lack of time prohibits it. In the text, however, it will be observed that wholesale unit costs are given, and in each case they have been computed according to the Commission's method.

STOP-POINT METHOD OF DISTRIBUTING RETAIL DELIVERY COSTS TO PRODUCTS BY DISTRIBUTOR 1

In a previous report [4] of the Commission on milk distribution an analysis was given of a method used to distribute delivery costs to milk and milk products termed the "stop-point" method. During the present investigation the examiners have again come in contact with this method; and because of the deviations from the theory in the application of it, as described in the report mentioned, it has been considered advisable to analyze its application again as recently observed.

The executives of the companies employing the so-called "stop-point" method maintain that the primary business of a milk distributor is to deliver milk, and that insofar as delivery is concerned all other commodities such as cream, cocoa milk, butter, cottage cheese, etc. are in the nature of byproducts. They assert that these "byproducts" are sold to customers on the routes because milk is sold, and that they either accompany a sale of milk, or that sales of such products are made only to those customers who buy milk, the implication being that no customer ever buys cream or the other products without at one time or another buying milk as such. In other words, the theory implies that there are no customers who buy only products such as cream, cocoa milk, cottage cheese, eggs, etc., or, if any such do exist, the sales to them are negligible. Hence it is maintained that all milk products delivered should bear the greater proportion of the retail delivery costs. Further, it is claimed that all the packages of milk, without regard to the different sizes, should be used as the basis for prorating delivery expenses. The application and consequent development of this method is presented below in detail, because it is only in this way that the significance of the various steps and their effects upon quantities may be fully appreciated.

In column (2) of appendix table B1 are given the gross quantities of the various products sold by the company and considered as retail sales.

[4] Report of the Federal Trade Commission on the Sale and Distribution of Milk and Milk Products, 74th Cong., 2d sess., H. Doc. No. 387.

APPENDIX TABLE B1.—*Distributor 1.—Stop point method of computing modified units to be used in distributing delivery costs by products (retail route sales, October 1935)*

Products	Unit of sale	Gross units sold [1]	Net units of sale [2]	Point value for weighting units sold	Weighted units of sale [3]	Method of modification of units sold	Modified units to be used in distributing a portion of the costs	Subtotals of modified points
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pasteurized milk	Gallon	19,783	19,666	1	19,666	½	9,833	
Do	Quart	3,155,313	3,139,138	1	3,139,138	½	1,569,569	
Do	Pint	799,794	788,633	1	788,633	1	788,633	
Do	½ pint	466,497	465,209	1	465,209	½	232,604½	
Special milk	Quart	80,698	80,307	1	80,307	1.00	80,307	
Do	Pint	96,053	96,053	1	96,053	1.00	96,053	
Certified milk	Quart	5,675	5,623	1	5,623	1.00	5,623	
Do	Pint	1,945	1,666	1	1,666	1.00	1,666	
Acidophilus milk	Pint	2,293	2,293	1	2,293	1.00	2,293	
Total		4,576,382	4,569,466		4,569,466		14,031,842	4,031,842
40 percent cream	Gallon	102	102	2	204	½	102	
Do	Quart	2,939	2,924	2	5,848	½	2,924	
30 percent cream	Gallon	3,552	3,438	1	3,438	½	1,719	
Do	Quart	74	74	2	148	½	74	
Do	½ pint	2,417	2,347	1	2,347	½	1,173½	
Do	Gill	85,961	85,546	1	85,546	½	42,773	
25–29 percent cream	Gallon	29	29	2	58	½	29	
25 percent cream	Gallon	1,464	1,464	2	2,928	½	1,464	
Do	Quart	6,733	6,601	1	6,601	½	3,300½	
Do	½ pint	48,500	47,969	1	47,969	½	23,984½	
Do	Gill	58,657	58,324	1	58,324	½	29,162	
20 percent sour cream	Gallon	132	130	2	260	½	130	
Do	½ pint	11,540	11,284	1	11,284	½	5,642	
Buttermilk	Gallon	11,584	11,284	1	11,284	½	5,642	
Do	Quart	29,026	28,645	1	28,645	½	14,322½	
Do	Pint	16,339	16,314	1	16,314	½	8,157	
Do	½ pint	7,731	7,668	1	7,668	½	3,834	
Cottage cheese	12 ounces	10,548	10,396	1	10,396	½	5,198	
Do	5 pounds	1,770	1,770	½	885	½	442½	
Do	10 pounds	3,960	3,960	½	1,980	½	990	
Do	1 pound	6,810	6,810	½	3,405	½	1,702½	
Creamed cottage cheese	8 ounces	13,702	13,595½	1	13,595½	½	6,798	
Special cottage cheese:								
A	8 ounces	2,415	3,108	1	3,108	½	1,554	
B	8 ounces	766						

See footnotes at end of table.

APPENDIX TABLE B1—*Distributor 1.—Stop point method of computing modified units to be used in distributing delivery costs by products (retail route sales, October 1935)*—Continued

Products	Unit of sale	Gross units sold [1]	Net units of sale [2]	Point value for weighting units sold	Weighted units of sale [3]	Method of second modification of units sold	Modified units to be used in distributing a portion of the costs	Subtotals of modified points
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Butter:								
Salt	Pound	39,934¾	46,356¼	1	46,356	[6] ½	23,178	
Sweet	Pound	8,227½						
Cocoa milk	Quart	30,871	30,219	½	15,109½	[6] ½	7,555	
Do	½ pint	459,188	455,897	½	227,948½	[6] ½	113,974	
Malted milk:								
Chocolate	2 pounds	1,010						
Do	5 pounds	80	1,127	[7]				
Plain	5 pounds	80						
Shakers	Number	116	116	[7]				
Miscellaneous:								
1	Package	22,915	320,425	1	347,892	[6] ½	173,946	
2	Package	323,404						
3	Package	24,972	19,936	1	25,013	[6] ½	12,506½	
4	Package	96	96	1				
5	Package	27,371	27,371	1				
6	Package	5,077	5,077	1				
7	Package	49,413	49,306	1	49,306	[6] ½	24,653	
8	Package	2,935						
Eggs:								
A	Dozen	4,640½	13,409½	1	13,409½	[6] ½	6,705	
B	Dozen	10,388						
Total other than milk (excluding shakers and malted milk)		1,369,303¾	1,320,746½		1,075,307		537,654	537,654
Grand total (excluding shakers and malted milk)		5,945,685¾	5,890,242½		5,644,803		[8]4,569,496	4,569,496

[1] Includes all sales classed as retail by distributor.
[2] Quantities remaining after deducting retail sales made in company store and from platform directly to purchaser.
[3] Quantities obtained by multiplying column (3) by column (4).
[4] Percentages of difference between pasteurized milk packages and modified units of other products.
[5] Packages of milk sold (4,569,496) minus weighted units of other products (537,654).
[6] Since this method is based on the theory that cream and products other than milk are incidental deliveries, milk, being considered of major importance in application of the theory, is given either a weight of 1 or the weight indicated by the percentages. Cream and products other than milk are given a value of ½.
[7] Direct commission not counted.
[8] Note that this quantity is the same as shown in column (5). This is according to the theory that all products should equal the packages of milk sold.

APPENDIX TABLE B2—*Distributor 1.—Stop point method of distributing delivery costs to products (retail-route sales, October 1935)*

Products	Unit of sale	Modified units to be used in distributing a portion of the costs [1]	Expense groups [2]											
			Drivers' salaries, route foreman salaries, auto expense, stable expense, etc.	Ice manufactured, power, and refrigeration	Commissions	Miscellaneous Bonus	Milk bonus	Bottle expense, bottle exchange, case repairs, and depreciation	Cartons, bags, etc.	Breakage	For depreciation and repairs	Butter box repairs	Totals
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Pasteurized milk	Gallon	17,314	$308.52	$6.79	$379.28		$77.12				$50.91		$822.62
Do	Quart	2,707,058	49,841.59	1,097.19	17,785.50		4,157.19	$6,175.68		$505.42			79,562.57
Do	Pint	702,435	12,516.88	275.55	2,994.92		609.00	3,353.60		126.93			19,876.88
Do	Half pint	409,165	7,291.03	160.50	623.05		126.69	660.12		73.94			8,935.33
Special milk	Quart	80,307	1,432.08	31.50	633.25			155.96		3.76			2,256.55
Do	Pint	16,105	287.19	6.32	72.57			67.63		.75			434.46
Certified milk	Quart	5,623	100.27	2.21	51.25			10.92		.21			164.90
Do	Pint	1,606	28.64	.63	8.24			6.74		.06			44.31
Acidophilus	Pint	2,229	39.75	.87	26.97			9.36					76.95
40 percent cream	Gallon	102	1.83	.04	11.59						.26		13.72
Do	Quart	102	1.83	.04	9.29			.40		.18			11.74
Do	Half pint	1,718	30.80	.67	46.03			4.88		3.14			85.52
30 percent cream	Gallon	74	1.33	.03	6.82						.19		8.37
Do	Quart	1,163⅓	20.86	.46	87.54			4.52		2.13			115.31
Do	Half pint	23,122½	414.57	9.07	495.78			65.62		42.25			1,027.29
Do	Gill	42,773	766.90	16.78	504.42			213.61		78.16			1,579.87
24 percent to 25 percent cream	Gallon	29	.52	.01	2.41						.08		3.05
20 percent cream	Gallon	1,484	26.61	.58	99.43						3.84		130.46
Do	Quart	3,360⅔	59.18	1.29	176.92			12.81		6.03			256.23
Do	Half pint	23,984½	430.03	9.41	385.70			68.06		43.82			937.02
Do	Gill	29,328½	525.85	11.50	282.98			146.47		53.59			1,020.39
20 percent sour cream	Gallon	130	2.33	.05	8.95						.34		11.67
Do	Half pint	5,642	101.16	2.21	64.76			112.96					281.09
Buttermilk	Gallon	292	5.24	.11	8.43						1.51		15.29
Do	Quart	14,322⅔	256.86	5.62	165.33			55.63		1.41			484.81
Do	Pint	8,157	146.25	3.20	56.50			68.51		.80			275.26
Do	Half pint	3,796½	68.07	1.49	10.96			10.77		.37			91.66

See footnotes at end of table.

APPENDIX TABLE B2—*Distributor 1.—Stop-point method of distributing delivery costs to products (retail-route sales, October 1935)*—Continued

Products	Unit of sale	Modified units to be used in distributing a portion of the costs	Expense groups										
			Drivers' salaries, route foreman salaries, auto expense, stable expense, etc.	Ice manufactured, power, and refrigeration	Commissions	Miscellaneous Bonus	Milk bonus	Bottle expense, bottle exchange, case repairs, and depreciation	Cartons, bags, etc.	Breakage	For depreciation and repairs	Butter box repairs	Totals
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Cottage cheese	12 ounces	5,133	$92.03	$2.01	$78.95								$172.99
Do	5 pounds	442½	7.93	.17	9.08								17.18
Do	10 pounds	120	2.15	.05	2.46								4.66
Do	Tub	1,537½	27.57	.60	23.65								51.82
Creamed cottage cheese	8 ounces	6,798	121.88	2.67	90.75					$13.28			228.58
Special cottage cheese:													
A	8 ounces	1,584	28.40	.62	17.27					.80			47.09
B													
Butter:													
Salt	Pound	23,178	415.57	9.09	1,031.58					2.56		$4.29	1,463.09
Sweet													
Cocoa milk	Quart	7,555	135.46	2.96	193.78			$58.69		.86			391.75
Do	Pint												
Do	Half pint	113,974	2,043.48	44.72	730.87			646.87		13.18			3,479.12
Malted milk:													
Chocolate	2 pounds				14.42								14.42
Do	5 pounds	(3)			1.19								1.19
Plain	5 pounds				1.43								1.43
Shakers	Number	(4)											
Miscellaneous:													
1	Package	173,946	3,118.74		2,090.10	$2,183.87			$37.47	.22			7,430.40
2	Package												
3	Package	12,500½	224.24		112.05	157.02			2.70	.10			496.11
4	Package												
5	Package												
6	Package												
7	Package	24,653	442.02		333.03	309.51			5.31				1,089.87
8	Package												
Eggs:													
A	Dozen	6,705	120.22	2.63	389.53					1.79			514.17
B	Dozen												
C	Dozen												
Grand total (excluding shakers and malted milk)		4,569,496	81,485.80	1,709.64	30,118.90	2,650.40	$1,970.00	11,909.81	45.48	975.74	$57.13	4.29	[4] 133,927.19

[1] These quantities are the same as shown in appendix table B1, column (7).

[2] The amounts in these groups are those charged against them by the distributor and have been accepted as correct. Some of these expenses are distributed by use of the modified units while others are distributed by means of several other methods. One of the groups employing the modified units is that amounting to $81,485.80. The method as applied would be to divide this amount by 4,569,496, obtaining an average unit expense of $0.0178326, which would in turn be multiplied by the respective quantities of modified units of each product. However, the amounts thus obtained would not agree with those computed by the company because of differences in net quantities as obtained by the commission and by the distributor and consequent conversions. In order to make the respective allocations agree with those given by the distributor, the amounts for each product were divided by the modified units computed by the commission and the resulting average expense multiplied by these quantities. For example, the distributor assigned $69,958.02 to pasteurized milk. This divided by the modified points for pasteurized results in an average expense of $0.0178193, which is then multiplied by the respective quantities of modified points for all sizes of containers of pasturized milk.

[3] Direct commission.

[4] Not counted.

[5] Total retail delivery expense accumulated by the distributor and accepted as correct. Individual amounts are computed by cross-addition for each product.

APPENDIX TABLE B3—*Distributor 1.—Computation of final unit costs (retail route sales, October 1935)*

Products	Unit of sale	Gross units of sale [1]	Units used to compute final unit cost			Delivery costs distributed to products		Unit cost	
			Name [2]	Quantity [3]	Company's method of grouping [4]	Amount [5]	Company's method of grouping [6]	Using company's methods [7]	Commission's computation [8]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Pasteurized milk	Gallon	19,763	Quart equivalent	79,052		$822.62			$0.0104
Do	Quart	3,183,785	Quart equivalent	3,183,785		79,562.57			.0250
Do	Pint	799,794	Quart equivalent	399,897		19,876.88			.0497
Do	½ pint	466,497	Quart equivalent	116,624	3,779,358	8,935.33	$109,197.40	$0.0289	.0766
Special milk	Quart	80,626	Quart equivalent	80,626		2,256.55			.0280
Do	Pint	16,201	Quart equivalent	8,101	88,727	434.46	2,691.01	.0303	.0536
Certified milk	Quart	5,675	Quart equivalent	5,675		164.90			.0291
Do	Pint	1,648	Quart equivalent	824	6,499	44.31	209.21	.0322	.0538
Acidophilous milk	Pint	2,393	Quart equivalent	1,197	1,197	76.95	76.95	.0643	.0643
Total		4,576,382		3,875,781	3,875,781	112,174.57	112,174.57		
40-percent cream	Gallon	102	Quart equivalent	408		13.72			.0336
Do	Quart	290	Quart equivalent	230		11.74			.0510
Do	½ pint	3,552	Quart equivalent	888	1,526	85.52	110.98	.0727	.0953
30-percent cream	Gallon	74	Quart equivalent	296		8.37			.0283
Do	Quart	2,417	Quart equivalent	2,417		115.31			.0477
Do	½ pint	46,723	Quart equivalent	11,681		1,027.29			.0879
Do	Gills	85,951	Quart equivalent	10,744	25,138	1,579.87	2,730.84	.1086	.1470
24- to 25-percent cream	Gallon	29	Quart equivalent	116	116	3.05	3.05	.0263	.0263
20-percent cream	Gallon	1,491	Quart equivalent	5,964		130.46			.0219
Do	Quart	6,753	Quart equivalent	6,753		256.23			.0379
Do	½ pint	48,550	Quart equivalent	12,138		937.02			.0772
Do	Gills	58,994	Quart equivalent	7,374	32,229	1,020.39	2,344.10	.0727	.1384
20-percent sour cream	Gallon	132	Gallon equivalent	132		11.67			.0884
Do	½ pint	11,540	Gallon equivalent	721	853	281.09	292.76	.3432	.3899
Buttermilk	Gallon	586	Gallon equivalent	586		15.29			.0261
Do	Quart	29,526	Gallon equivalent	7,382		484.81			.0657
Do	Pint	16,539	Gallon equivalent	2,067		275.26			.1332
Do	½ pint	7,713	Gallon equivalent	482	10,517	91.66	867.02	.0824	.1902
Cottage cheese	12 ounces	10,266	Pound equivalent	7,700		172.99			.0225
Do	5 pounds	1,770	Pound equivalent	1,770		17.18			.0097
Do	10 pounds	3,900	Pound equivalent	3,900		4.66			.0012
Do	Tubs	6,150	Pound equivalent	6,150	19,520	51.82	246.65	.0126	.0084
Creamed cottage cheese	8 ounces	13,702	Pound equivalent	6,851	6,851	228.58	228.58	.0334	.0334
Special cottage cheese:									
A	8 ounces	2,415	Pound equivalent	1,591	1,591	47.09	47.09	.0296	.0296
B	8 ounces	766							
Butter:									
Salt	Pound	39,934	Pound equivalent	48,162	48,162	1,463.09	1,463.09	.0304	.0304
Sweet	Pound	8,227	Pound equivalent						
Cocoa milk	Quart	30,871	Gallon equivalent	7,718		391.75			.0508
Do	½ pint	459,188	Gallon equivalent	28,699	36,417	3,479.12	3,870.87	.1063	.1212
Malted milk:									
Chocolate	2 pounds	1,010	Pound equivalent	1,010		14.42			.0143
Do	5 pounds	80	Pound equivalent	80		1.19			.0149
Plain	5 pounds	80	Pound equivalent	80	1,170	1.43	17.04	.0146	.0179
Shakers	Number	116	Pound equivalent						
Miscellaneous:									
1	Package	22,915							
2	Package	323,404							
3	Package	24,972	Package	403,835	403,835	7,926.51	7,926.51	.0196	.0196
4	Package	96							
5	Package	27,371							
6	Package	5,077							
7	Package	49,413	Package	52,348	52,348	1,089.87	1,089.87	.0208	.0208
8	Package	2,935							
Eggs:									
A	Dozen	4,640	Dozen	15,029	15,029	514.17	514.17	.0342	.0342
B	Dozen	10,388							
Total other than milk (excluding shakers and malted milk).		1,369,303		655,302	655,302	21,752.62	21,752.62		
Grand total (excluding shakers and malted milk).		5,945,685		4,531,083	4,531,083	133,927.19	133,927.19		

[1] These are the same quantities shown in appendix table B1, column (2).
[2] Quart equivalents are computed by multiplying gallons by 4; quarts remaining as quarts; dividing pints by 2; ½ pints by 4; and gills by 8. Gallon equivalents are computed by leaving gallons as such; dividing quarts by 4; pints by 8; and ½ pints by 16. Pounds, packages of miscellaneous products, and dozens remain as such.
[3] These quantities are those in column (2) converted according to the method outlined in note 2.
[4] Instead of keeping the identity of all sizes of products after conversion, the distributor grouped the equivalents by products.
[5] These are the amounts shown in appendix table B2, column (13).
[6] Since the distributor groups equivalents by products he does the same for expenses.
[7] The amounts in column (7) divided by corresponding quantities in column (5).
[8] The amounts in column (6) divided by corresponding quantities in column (4).

In accordance with the Commission's practice of deducting all sales not made from routes, such sales were eliminated, leaving the net quantities for route sales, shown in column (3). The company under discussion apparently followed this same procedure up to this point. Having the net quantities presumably delivered on routes, the next step is the multiplication of these quantities by the unit values shown in column (4). The multiplication results in the weighted units shown in column (5), a reduction from the total net units of sale in column (3) of 5,890,242½ to 5,644,803, or 4.17 percent as shown in appendix table C.

APPENDIX TABLE C.—*Percentage reductions in units of sale by several modifications*

	Number	Percent reduction
Total net units of sale	5,890,242½	
Units after first weighting	5,644,803	[1] 4.17
Units after second weighting	4,569,496	[2] 19.05 or [3] 22.42

[1] Net units of sale as base.
[2] Units after first weighting as base.
[3] Net units of sale.

After this first weighting the modified units in column (5) are in turn modified. The procedure in theory and application is to reduce by one-half all items except pasteurized milk, special milk, certified milk, and acidophilus milk.[5] In other words it is claimed that while the products other than those just named, are sold, such sales are largely possible because the milk items named are sold. Nevertheless it is believed these other products should assume some part of the expense of delivery and their importance in this assumption is reflected in this manner. If the theory were applied in every detail, the total units of milk obtained after the first weighting, namely, 4,569,496 (subtotal, col. (5)) would be the number of units to be applied to all products; that is, instead of all products equalling 5,644,803 units (col. 5) they would now equal or be made to equal 4,569,496, which is seen as the total of column (7), a reduction from the first modification of the net units of sale by 19.05 percent (appendix table C). In order to make all products equal to the total given in column (7), the sum of the second modified units of all products (537,654) other than the four milk products mentioned is deducted from this total, leaving a remainder of 4,031,842 modified units to be distributed back to the four milk products as compared with their original quantity of 4,569,496. Ordinarily this distribution is made to each product according to the proportion that the respective quantities of each product bore to the original 4,569,496, for example, the total packages of pasteurized milk being 4,463,626 or 97.68 percent of 4,569,496, would equal this same percent of 4,031,842.

However, since the respective modified quantities [6] of special milk, certified, and acidophilus milk, were considered as a negligible percent of the total, the company in question carried them over at their full value as seen in column (7). Therefore, they were then added with all the other modified units, and the resulting total of 643,524 deducted from 4,569,496, leaving a remainder of 3,925,972 (col. 8) to be applied to pasteurized milk. The company in using quantities for various purposes of computations simply showed the different products as such without showing the different sizes, such as quarts, pints, half pints, etc.; but the commission, as observed in the table, has kept the identity of the individual sizes of containers in order to show the effect of the method upon the actual units of sale. Accordingly, in the company's application of the stop-point method, pasteurized milk would be equal to 3,925,972 units. With the identity of the sizes maintained, the commission has distributed these units to gallons, quarts, pints, and half pints of pasteurized milk according to the proportion which the quantities of these units of sale bear to their combined total in column (5), so in effect the results obtained were the same except that the company submerged the identity of the individual containers, while the commission has maintained this identity as an important factor in the consideration of product costs.

[5] In application of the "stop-point" method to wholesale delivery, cream is included in this group.
[6] Since the first four products in Appendix Table B1 were multiplied by 1, their modified quantities are the same as their original net quantities.

In the process of cost accounting, the fundamental reason for converting original quantities of sales to other units is to express them in terms of a common denominator, which in this case is the modified unit. Such a common denominator can be used for whatever purpose is desired, such as the accumulation of delivery expenses to the products sold expressed in terms of the common denominator, as they are here, as well as for other purposes, as in the case under discussion they are likewise used to distribute indirect expenses to retail delivery and wholesale delivery—that is, those expenses which cannot be directly identified with these two operations. In the accumulation of so-called delivery expenses, they are simply charged to a delivery account, which in turn is broken down and distributed to retail delivery, wholesale delivery, and possibly to other types of delivery. For simplicity, however, only the first two are considered to illustrate the use of modified units for distribution of indirect expenses. One of these indirect accumulations as given by the company is an item for supervision of $3,546.70. During the course of the month some of the supervision would naturally be directed to retail operations and some to wholesale. Lacking a more exact and practical method this amount is distributed to the respective divisions according to the modified units in each class of sales as shown in appendix table D.

APPENDIX TABLE D.—*Distribution of supervision, and indirect item of expense, to retail and wholesale delivery*

Classification	Number	Percent of total	Amount
Retail modified units	4,569,496	96.25	$3,413.70
Wholesale modified units [1]	177,836	3.75	133.00
Total	4,747,332	100.00	3,546.70

[1] The underlying data upon which the computations of these units are based are not shown in this report.

In addition to such indirect expenses, there are of course direct expenses which can be identified either as retail delivery expense or wholesale delivery expense. These include drivers' salaries and bonuses, vehicle expense, foremen's salaries, etc. The total of all such items, including direct and indirect expenses, for this company during October 1935 amounted to $133,927.19. This is made up of the individual amounts shown in appendix table B2 which represent various combinations of expenses.

Some of these expense groups are distributed to the different products by use of the modified units, or by some other method, the explanation of which would add nothing to the value of the report. As an example, however, of the use of the modified units, the amount of $81,485.80 can be considered. The modified units are used for this purpose by dividing the amount of the total modified units. This average expense per unit would then be multiplied by the respective quantities of modified units of each product giving that proportion of the expense applicable to each product.[7]

Having accumulated the delivery costs by products, as shown in appendix table B2 (column 13), the next and final step is to compute a unit cost. This is shown in appendix table B3. It will be observed that the expenses by products, as given in column (13) of appendix table B2, have been transferred to column (6) of appendix table B3. Furthermore, it will be noticed in column (2) of this table that the gross units of products sold and considered as retail sales by the

[7] Inasmuch as the company made an error of approximately 1,000 units in converting one product, and since the net quantities as shown by the company and those obtained by the commission were not the same, the amounts distributed by the company following its method and the commission, if it followed the company's method in every detail, would not be the same. To approximate the totals given by the company, the commission has taken these amounts and distributed them according to its own computed modified units. For example, the company computed 3,923,048 modified units for pasteurized milk while the commission's total was 3,925,972 (appendix table B1, column 8), or a difference of 2,924. If the company's method was followed, the part of the $81,485.80 distributed to pasteurized milk would be $69,975.75 as against $69,958.02 distributed by the company, or a difference of only $17.73 which, of course, would be negligible in the final results. The commission, however, accepted the company's amount and divided it by 3,925,972, obtaining a unit expense of $0.0178193 (see note 2, appendix table B2), which in turn was multiplied by the respective modified units of pasteurized milk as computed by the commission. The same procedure was followed for special milk, certified milk, acidophilous milk, and the other products. In the case of certified milk and acidophilous milk, the commission's units were the same as those of the company. In the case of special milk the quantities differ by only 2.

company are to be used in the final computation. These are converted to the various equivalents shown in columns (4) and (5). For example, quart equivalents are computed by multiplying gallons by four, quarts remain as such, pints are divided by two, and one-half pints by four. As previously stated, the company groups all quantitites by products as shown in column (5) while the commission has maintained the identity of the individual sizes in column (4). In either case these quantities are divided into the amounts shown in columns (7) and (6), respectively. The company's unit cost is shown in column (8) while the unit costs by original sizes of products expressed in equivalents, however, are shown in column (9).

It should be apparent from the foregoing discussion that the application of this method to distribute delivery costs to products is complicated and the question may naturally be asked, what is the purpose in using it? Has it been devised to show true conditions regarding costs of delivery or is there a conscious effort to show as little profit as possible on pasteurized milk,[8] or even losses, so that such results when exhibited may help to quell the agitation about profits on milk? According to the records of this company during the same month, as used for the explanation of this method, only a slight profit was realized on pasteurized milk, while distributor 2, as discussed below, who uses the same method of distribution of costs actually showed a substantial loss.

Now as to the reasonableness of some of the steps in the application of the method consider the weighting of the net quantities of products by multiplication with the unit value in column (4), appendix table B1. These values are shown in appendix table E, in comparison with values proposed by the International Association of Milk Dealers.[9] As was pointed out in a previous report[10] of the commission, such values were, insofar as was ascertainable, arbitrarily assigned to the different products. In that report it was stated that "they form a convenient basis for showing certain information or are a convenient guide for performing various functions of accounting." Subsequent questioning of those connected with the industry and analysis of data obtained has not disclosed a more substantial explanation for their existence and use. If this is true, then any use of quantities modified by such arbitrary units will continue and magnify the element of error thus introduced. This is true unless, of course, after the second modification of the units of products other than pasteurized milk, special milk, certified, and acidophilus, the net result is to reach the same quantity as the original net. For example in column (3), appendix table B1, the net quantity of 40 percent cream is 102 gallons. The first modification is multiplication of this by two, while in the second modification the result obtained in this way is multiplied by one-half or divided by two. Other examples of this are obvious and emphasize the fact that while a distributor may protest involved and detailed methods yet he himself uselessly employs them. For further inconsistencies of application of this method concerning this particular modification the reader is referred to the discussion of the stop-point method as applied by distributor 2. Impossible also to understand is why the units of cccoa milk should be so reduced that they are ultimately only one-fourth of their original net quantities (columns 5 and 7) and yet this same product as shown in the discussion of distributor 2 is used by him in the totals assigned to milk products in addition to those used by distributor 1 and are consequently used as the total assigned to all products.

[8] This corresponds to that usually known as grade B milk.

[9] A Standard Cost Finding and Accounting System for Milk Dealers, issued by the International Association of Milk Dealers, Chicago, Ill., 1923, revised, p. 36, vol. 1.

[10] Ibid, p. 85.

APPENDIX TABLE E.—*Unit values or weights to be assigned to products in distributing selling and administrative costs to products as proposed by the International Association of Milk Dealers* [1] *compared to those used by distributor 1*

Product	Container	Unit of sale	Proposed by association			Used by distributor 1	
			Retail	Retail and wholesale	Wholesale	Retail value	Wholesale value
Inspected whole milk		Quart	1	1	1	1	1
Do		Pint	1	1	½	1	½
Certified whole milk		Quart	1	1	1	1	1
Do		Pint	1	1	½	1	½
Do		Half pint	1	½	½	1	½
Pasteurized whole milk		Gallon	1	2	2	1	2
Do		Quart	1	1	1	1	1
Do		Pint	1	1	½	1	½
Do		Half pint	1	½	½	1	½
Pasteurized skim milk		Gallon	1	2	2		
Do		Quart	1	1	1		
Certified sweet cream		Half pint	1	1	1		
Pasteurized sweet cream		Gallon		3	3	2	3
Do		Quart	1	1	1½	1	1½
Do		Pint	1	1	1	1	1
Do		Half pint	1	1	½	1	½
Pasteurized sour cream		Quart	1	1	1½	1	1½
Do		Pint	1	1	1	1	1
Do		Half pint	1	1	1	1	½
Plain buttermilk		Gallon		2	2	1	2
Do		Quart	1	1	1	1	1
Do		Pint	1	1	½	1	½
Do		Half pint	1	½	½	1	½
Special buttermilk		Quart	1	1	1	1	1
Do		Pint	1	1	½	1	½
Do		Half pint	1	½	½	1	½
Butter, salted	63-pound tub	1 pound		½	½		
Do	1-pound carton	1 pound	1	½	½	1	1
Do	2-in-1-pound carton.	1 pound		1	1	1	1
Do	4-in-1-pound carton.	1 pound		1	1	1	1
Do	½-pound carton	1 pound	1	½	½	1	1
Do	¼-pound carton	1 pound	1	¼	¼	1	1
Butter, sweet	65-pound tub	1 pound		½	½		
Do	1-pound carton	1 pound	1	½	½	1	1
Do	2-in-1-pound carton.	1 pound		1	1	1	1
Do	4-in-1-pound carton.	1 pound		1	1	1	1
Do	½-pound carton	1 pound	1	½	½	1	1
Do	¼-pound carton	1 pound	1	¼	¼	1	1
Cottage cheese	63-pound tub	1 pound		½	½	½	½
Do	10-pound pail	1 pound		½	½	½	½
Do	5-pound pail	1 pound		½	½	½	½
Do	1-pound carton	1 pound	1	1		½	½
Do	¾-pound carton	1 pound	1	1		1	1

[1] As given in "A Standard Cost Finding and Accounting System for Milk Dealers" on revised p. 36, vol. 1, system issued 1923. Also in "Simplified Accounting Manual for Milk Dealers" as revised in 1931, form no. 32. In this manual delivery expenses are considered as a portion of selling expenses.

This involves the step which uses 4,569,496 units (appendix table B1, column 5) and makes all products equal this quantity which is a reduction of 22.42 percent from the net quantities of units of sale shown in column (3). (See appendix table C.) It will be recalled that the company used this figure to distribute $81,495.80 by dividing this amount, obtaining a unit expense and multiplying all modified units by this unit expense, thereby arriving at the proportion of the total applicable to the respective products. In other words, a figure 22.42 percent less than the original quantity is used as a divisor in this process, thereby giving a larger unit expense than would be obtainable had the original quantity been used as the divisor. Then by multiplying the quantities of special milk, certified milk, and acidophilous milk, which have maintained their original quantities, and pasteurized milk, which quantity has been reduced proportionately little, by this unwarrantably increased unit expense, the greater proportion of the total expense is accumulated to these products. The results are given in appendix table B2, which shows an amount of $112,174.57 or 83.76 percent of the total expense charged against these products. This, of course, probably explains the slight profit on the four products just named as shown by the company records.

It is in the final computation that a great deal is hidden as shown in appendix table B3. It will be noticed that, instead of converting into the equivalents shown, the net quantities, the company converted the gross sales units, which it will be recalled include sales at the company store and sales at the platform. There seems to be little reason why, if these have not figured in the distribution of costs, they should now be considered in computing the final unit cost. According to the company's method of converting all products into the equivalents shown and combining them as in column (5), and combining the costs as shown in column (7), the final cost per quart equivalent is $0.0289 shown in column (8). After analyzing the method of distributing costs, and then observing the manner in which such amounts are used, it would appear that a unit cost of this kind is of little value to indicate the cost of delivering a quart of milk. Furthermore, the method itself, more than ever, in this final computation appears to lack validity, since if quart equivalents arrived at by converting gallons, quarts, pints, ½ pints, are to be used as a divisor, they should be converted, using their original identity. However, the unit costs in column (9) show what happens when this is done; that is, the smaller the size of the container the greater its cost on a quart equivalent basis. While in reality there is a certain degree of truth in this as disclosed in the commission's method of computing unit costs the difference is not inversely proportional to the size of the container as would seem to be indicated by the results obtained.

STOP-POINT METHOD OF DISTRIBUTING RETAIL DELIVERY COSTS TO PRODUCTS AS APPLIED BY DISTRIBUTOR 2

This distributor is also supposed to use the stop-point method. The application in this case is shown in appendix tables F1 and F2. The net sales as shown in column (2) are converted by multiplication by the values shown in column (3) [11] resulting in the same quantities with the exception of pints of acidophilous. In accordance with the theory as already explained, the total number of sales units of the several grades of whole milk (including acidophilous milk) is supposed to be used as the new grand total of all products; but, as shown in column (4), this distributor included his sales of cocoa milk with his whole-milk sales, resulting in a total of 323,263. This number was used as the new grand total, to be divided between the principal products and the other products. One-half of the respective quantity of each of the other products was then extended as a component of this new grand total; the aggregate of these was 45,326. This left 277,937 out of the new grand total (323,263) to be assigned to the principal products (whole milk and cocoa milk).

[11] As is evident, the use of this column has little value since resulting quantities are the same with the exception of pint bottles of acidophilous. The company showed 21 quarts as being sold but actually sold 42 pints, so the column has been inserted simply to show this fact.

APPENDIX TABLE F1—*Distributor 2.—Stop point method of distributing delivery costs by products—Retail route sales, October 1935*

Products	Unit of sale	Net sales units	Point value for weighting units sold	Weighted units of sale [1]	Method of second modification of units sold	First division of total delivery expenses: Modified points: Number	First division of total delivery expenses: Modified points: Percentage of total	First division of total delivery expenses: Expenses	Average of values for 1 cent pence per unit of sale	Total of delivery costs distributed to products [2]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pasteurized milk	Gallon	502	1	502					[3] $0.0435503	$21.87
Do	Quart	246,228	1	246,228					.0435503	10,723.51
Do	Pint	32,456	1	32,456					.0435503	1,413.98
Do	½ pint	5,853	1	5,853					.0435503	254.86
Special milk	Quart	16,007	1	16,007					.0435503	697.25
Do	Pint	4,372	1	4,372					.0435503	190.44
Do	½ pint	1,305	1	1,305					.0435503	56.83
Certified and inspected	Quart	1,005	1	1,005					.0435503	69.91
Do	Pint	895	1	895					.0435503	38.99
Cocoa milk	Gallon									
Do	Quart	8,751	1	8,751					.0435503	381.19
Do	Pint	2,824	1	2,824					.0435503	123.01
Do	½ pint	3,759	1	3,759					.0435503	163.74
Total		323,263		323,263		[4] 277,937	[5] 85.9786	[6] $14,081.11		14,081.11
Light cream	Gallon	14	1	14	[7] ½	7			[8] .02533148	.35
Do	Quart	1,003	1	1,003	½	501½				25.41
Do	Pint	822	1	822	½	411			.02533148	20.82
Do	½ pint	529	1	30	½	15,500	5%		.02533148	785.93
Heavy cream	Gallon	1	1	1	½	1	⅛		.02533148	.03
Do	Quart	55	1	55	½	27½	⅛		.02533148	1.39
Do	Pint	57	1	57	½	28½	⅛		.02533148	1.44
Do	½ pint	2,644	1	2,644	½	1,322	⅛		.02533148	66.98
25-percent cream	Gallon									
30-percent cream	Gallon									
Sour cream	Gallon									
Do	Jar	305	1	305	½	152½			.02533148	7.73
Skim milk	Gallon	14	1	14	½	7			.02533148	.35
Do	Quart	779	1	779	½	387½			.02533148	19.65

See footnotes at end of table.

APPENDIX TABLE F1—*Distributor 2.—Stop point method of distributing delivery costs by products—Retail route sales, October 1935*—Contd.

Products	Unit of sale	Net sales units	Point value for weighting units sold	Weighted units of sale [1]	Method of second modification of units sold	First division of total delivery expenses: Modified points: Number	First division of total delivery expenses: Modified points: Percentage of total	First division of total delivery expenses: Expenses	Average of divided expense per unit of sale	Total of delivery costs distributed to products [2]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Creamed buttermilk	Gallon	12	1	12	½	6			$0.02533148	$0.30
Do	Quart	1,857	1	1,857	½	928½			.02533148	47.04
Do	Pint									
Do	½ pint	70	1	70	½	35			.02533148	1.77
Plain buttermilk	Gallon	179	1	179	½	89½			.02533148	4.53
Do	Quart	9,239	1	9,239	½	4,619½			.02533148	234.04
Do	Pint	550	1	550	½	275			.02533148	13.93
Do	½ pint									
Acidophilous	Quart									
Do	Pint	42	½	21	½	10½			.02533148	.53
Lactic	Gallon									
Do	Pint	401	1	401	½	200½			.02533148	10.16
Butter:										
Salt	Pound	13,609	1	13,609	½	6,804½			.02533148	344.74
Sweet	Pound	2,671	1	2,671	½	1,335½			.02533148	67.66
Special	Pound	1,514	1	1,514	½	757			.02533148	38.35
Creamed cottage cheese	10-pound gallon container.	730	1	730	½	365			.02533148	18.49
Do	5-pound carton.	2,680	1	2,680	½	1,340			.02533148	67.89
Do	3-pound carton.	261	1	261	½	130½			.02533148	6.61
Do	Jars	8,920	1	8,920	½	4,460			.02533148	225.96
Plain cottage cheese	10-pound gallon container.	100	1	100	½	50			.02533148	2.53
Do	3-pound carton.	24	1	24	½	12			.02533148	.61
Do	Jars	43	1	43	½	21½			.02533148	1.09
Eggs	Dozen	8,057	1	8,057	[7] ½	4,028½			.02533148	204.10
Chocolate malted milk (1-pound)	Pounds	2	1	2	½	1			.02533148	.05

Chocolate malted milk (2-pounds)	Pounds	3,248		3,248	½	1,624			$0.02533148	$82.28
Chocolate malted milk (5-pounds)	Pounds	25	1	25	½	12½			.02533148	.63
Chocolate malted milk (1-pound)	Pounds	7	1	7	½	3½			.02533148	.18
Plain malted milk (1 pound)	Pounds	1	1	1	½	½			.02533148	.03
Total		90,673		90,652		45,326	[8] 14.0214	[8] $2,296.35		2,296.35
Grand total		413,936		413,915		[9] 323,263	100	16,377.46		16,377.46

[1] Quantities obtained by multiplying column (2) by column (3).
[2] Obtained by multiplying unit expense figures in column (9) by quantities in column (4).
[3] $14,081.11 divided by 323,263.
[4] Packages of milk sold (323,263) minus weighted units of other products (45,326).
[5] Percentage that 277,937 is of 323,263; and 45,326 is of 323,263. The distributor computes this proportion by dividing the total delivery expense ($16,377.46) by 323,263, obtaining an average expense of $0.0506629 which is multiplied by 277,937 and 45,326 to obtain the respective amounts of $14,081.11 and $2,296.35.
[6] Total delivery cost ($16,377.46) multiplied by 85.9786 percent and 14.0214 percent, respectively.
[7] Since this method is based on the theory that cream and products other than milk are incidental deliveries they are given a weight of ½.
[8] $2,296.35 divided by 90,652.
[9] Note that this quantity is the same as shown in column (4). This is according to the theory that all products should equal the packages of milk sold.

72440—36—15

APPENDIX TABLE F2.—*Distributor 2: Stop-point method of distributing delivery costs to products—Retail route sales, October 1935*

Products	Unit of sale	Weighted units of sale [1]	Units used to compute final unit cost			Delivery costs distributed to products		Unit cost	
			Name [2]	Quantity [3]	Company's method of grouping [4]	Amount [5]	Company's method of grouping [6]	Using company's method [7]	Commission computation [8]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
								Cents	
Pasteurized milk	Gallon	502	Quart equivalent	2,008		$21.87			$0.0109
Do	Quart	246,228	Quart equivalent	246,228		10,725.51			.0436
Do	Pint	32,438	Quart equivalent	16,219		1,412.98			.0871
Do	½ pint	5,851	Quart equivalent	1,463	265,918	254.87	$12,415.23	$0.0467	.1742
Do	¼ pint	16,007	Quart equivalent	16,007		697.35			.0436
Special milk	Quart	4,372	Quart equivalent	2,186		190.44			.0871
Do	Pint	31	Quart equivalent	8	18,201	1.35	889.04	.0488	.1688
Do	½ pint	1,605	Quart equivalent	1,605		69.91			.0436
Certified and inspected	Quart	895	Quart equivalent	447	2,052	38.99	108.90	.0531	.0872
Do	Pint		Quart equivalent						
Cocoa milk	Gallon		Quart equivalent						.0436
Do	Quart	8,751	Quart equivalent	8,751		381.19			.0871
Do	Pint	2,824	Quart equivalent	1,412		123.01			.1742
Do	½ pint	3,759	Quart equivalent	940	11,103	163.74	667.94	.0602	
Total		323,263		297,274	297,274	14,081.11	14,081.11		
Light cream	Gallon	14	Quart equivalent	56		.35			.0063
Do	Quart	1,003	Quart equivalent	1,003		25.41			.0253
Do	Pint	822	Quart equivalent	411		20.82			.0507
Do	½ pint	30,526	Quart equivalent	7,632	9,178	773.27	819.85	.0893	.1013
Heavy cream	Gallon	1	Quart equivalent	4		.03			.0075
Do	Quart	55	Quart equivalent	55		1.39			.0253
Do	Pint	57	Quart equivalent	29		1.44			.0497
Do	½ pint	2,644	Quart equivalent	661	749	66.98	69.84	.0932	.1013
25 percent cream	Gallon								
30 percent cream	Gallon								
Sour cream	Gallon	305	Quart equivalent	76		7.73			.1017
Do	Jars	229	Quart equivalent	916		5.80			.0063
Skim milk	Gallon	775	Quart equivalent	775	1,691	19.63	33.16	.0196	.0253
Do	Quart								

Creamed buttermilk	Gallon	12	Quart equivalent	48		.30			.0063
Do	Quart	1,857	Quart equivalent	1,857		47.04			.0253
Do	Pint								
Do	½ pint	70	Quart equivalent	18		1.77			.0983
Plain buttermilk	Gallon	179	Quart equivalent	716		4.53			.0063
Do	Quart	9,239	Quart equivalent	9,239		234.04			.0253
Do	Pint	550	Quart equivalent	275		13.93			.0507
Do	½ pint		Quart equivalent						
Acidophilous	Quart								
Do	Pint								
Lactic	Gallon	21	Quart equivalent	11		.53			.0482
Do	Pint								
Butter:		401	Quart equivalent	200	12,364	10.16	312.30	.0253	.0508
Salt	Pound	13,609	Pound equivalent	13,609		344.74			.0253
Sweet	Pound	2,671	Pound equivalent	2,671		67.66			.0253
Special	Pound	1,514	Pound equivalent	1,514	17,794	38.35	450.75	.0253	.0253
Creamed cottage cheese	10-pound-gallon container	730	Pound equivalent	730		18.49			.0253
Do	5-pound carton	2,680	Pound equivalent	2,680		67.89			.0253
Do	3-pound carton	261	Pound equivalent	261		6.61			.0253
Plain cottage cheese	10-pound-gallon container	100	Pound equivalent	6,690		226.96			.0338
Do	3-pound carton	24	Pound equivalent	100		2.53			.0253
Do	Jars	43	Pound equivalent	24		.61			.0254
Eggs	Dozen	8,057	Dozen	32	16,517	1.09	323.18	.0307	.0341
Chocolate malted milk	1 pound	2	Pound equivalent	8,057	8,057	204.10	204.10	.0253	.0253
Do	2 pounds	3,248	Pound equivalent	2		.05			.0250
Do	5 pounds	25	Pound equivalent	3,248		82.28			.0253
Do	1 pound	7	Pound equivalent	25		.63			.0252
Plain malted milk	1 pound	1	Pound equivalent	7		.18			.0257
				1	3,283	.03	83.17	.0253	.0300
Total, other than milk		90,652		63,633	63,633	2,296.35	2,296.35		
Grand total		413,915		360,907	360,907	16,377.46	16,377.46		

[1] Quantities are the same as shown in appendix table F1, column (4).
[2] Quart equivalents are computed by multiplying gallons by 4; quarts remaining as quarts; dividing pints by 2; and ¼-pints by 4. Pound equivalents are all products sold in containers by weight converted to pounds, while dozens of eggs remain as such.
[3] These quantities are those in column (1) converted according to the method outlined in note 2.
[4] Instead of keeping the identity of all sizes of products after conversion, the distributor grouped the equivalents by products.
[5] These are the amounts shown in appendix table F1, column (10).
[6] Since the distributor groups equivalents by products he does the same for expenses.
[7] The amounts in column (7) divided by corresponding quantities in column (5).
[8] The amounts in column (6) divided by corresponding quantities in column (4).

The total delivery expense, $16,377.46, was then divided between the principal products and the other products as groups in proportion to these two numbers (277,937 and 45,326, respectively), resulting in the assignment of $14,081.11 to the principal group and $2,296.35 to the other group.[12] The first stated portion was then divided among the several grades of whole milk and cocoa milk in proportion to the respective numbers of sales units delivered (aggregating 323,263 units);[13] and the other stated portion was divided among the various products composing the other group in proportion to their respective sales units delivered (aggregating 90,652 units).[14]

Up to this point there were two noteworthy differences between the application of the stop-point method by distributor 1 and distributor 2. Distributor 2 included cocoa milk among his principal products: distributor 1 did not. In distributing the delivery expense assigned to the principal group among its constituents, distributor 2 apportioned it strictly in proportion to the numbers of sales units of the respective constituents: distributor 1 departed from the strict proportion, assigning slightly less to ordinary pasteurized milk (which constituted the greatly preponderating proportion of the total) and slightly more to the other grades of milk.

The next and final step was to compute the various unit expenses, which is illustrated in appendix table F2. It will be observed that, as usual, the commission has maintained the identity of the different containers. The company does not do this but simply shows products by groups without regard to sizes as indicated in column (5). Comparing the results as obtained in column (8) with those in column (9) it is obvious that in grouping all sizes of products there is considerable averaging which must of course be necessary or otherwise a unit cost is obtained as high as 17.42 cents ($0.1742) which is that for a ½-pint container. This means that by the use of the group method the distributor shows that it costs him 4.67 cents ($0.0467) to deliver a quart of milk. If carried out by different sized units, as the commission has done, approximately the same result, namely, 4.36 cents is obtained for milk in quart bottles. However, when a quart of pasteurized milk is delivered in four ½-pint bottles, the figures indicate that the cost is 17.42 cents. In this case the distributor sold ½ pints of pasteurized milk for 3½-cents per bottle or a quart in four ½-pint bottles for 14 cents. In other words, without even considering costs other than delivery, he would lose 3.42 cents on every four ½-pint bottles of pasteurized milk delivered. This, of course, appears very far-fetched. In the case of pints, it appears that his income would exceed his costs. At a selling price of 7 cents per bottle the distributor would receive 14 cents for a quart, while according to the delivery cost figures in appendix table F2, column (9), it would cost him only 8.71 cents to deliver this in two pint bottles. The inconsistency of such results is not evident by the company's method of grouping. The results obtained by distributor 1 showed similar discrepancies in plausibility.

Furthermore, by referring to appendix table B1, column (4), it will be seen that a number of the products were reduced and then by the values in column (6) reduced again. At the same time certain products, for example, gallons of cream, were increased in the former column and reduced in the latter column without affecting the original quantities. Distributor 2 did not take this intermediate step except in the case of acidophilus, and simply reduced certain original quantities by one-half.

A more startling deviation in the application of the stop-point method by the two distributors is the treatment of what is designated as cocoa milk. It will be remembered that the theory is that products other than milk are delivered because milk is delivered and accordingly distributor 1 considered cocoa milk as a byproduct of the sales of milk. However, in appendix table F1, it will be observed that distributor 2 has included cocoa milk as of the same value as milk, the implication being that other products are delivered, because milk and cocoa milk are delivered, apparently an illogical expansion of the original theory. If this were true, because of local conditions, no issue could reasonably be taken with this deviation, but computations show that the units of sale of cocoa milk for distributor 2 were only 3.7 percent of the total units sold, while for distributor 1 they were 8.3 percent and yet they were considered as incidental deliveries. In passing it may be of interest to note that distributor 2 showed a loss on cocoa milk. On the other hand distributor 1 showed a substantial profit on cocoa milk. Either a slight profit, or a loss, seems to be the inevitable fate of all those products considered as of major importance.

[12] By the process of dividing the total delivery expense ($16,377.46) by 323,263, giving a quotient of $0.0506629, and by multiplying this quotient by 277,937 and 45,326, respectively.

[13] By the process of dividing $14,081.11 by 323,263, giving a quotient of $0.0435593, and multiplying this quotient by the respective numbers of sales units delivered.

[14] By the process of dividing $2,296.35 by 90,652, giving a quotient of $0.0253314S, and multiplying this quotient by the respective numbers of sales units delivered (column 4).

Another deviation from the stop-point method as applied by distributor 1 is in the method of handling the delivery expense after dividing it into two portions, namely, $14,081.11 and $2,296.35. Distributor 2 after computing the modified units simply uses them in two groups to divide the expenses as just mentioned. Then he goes back and uses the quantities of units of sale as weighted in column (4)[15] to distribute the costs to the respective products, while distributor 1 uses the units as modified the second time. Furthermore, instead of taking each group of expense and using practically a different method to distribute each group, distributor 2 makes no distinction by groups of expense, the practice being to distribute the costs as one lump sum. It is believed that these deviations undoubtedly have some effect in causing the differences in unit costs shown by a comparison of the two tables.

METHOD USED BY DISTRIBUTOR 3 TO DISTRIBUTE RETAIL DELIVERY COSTS TO PRODUCTS

Representatives of this distributor more or less agreed that the method used to allocate those costs which included delivery costs to products was not accurate and simply served the purpose of presenting data for the company's own guidance. They did believe, however, that an accurate method should be devised by the industry so that individual members could see actual conditions reflected in their particular operations, and so that complaints of consumers and producers could be honestly arbitrated in light of the true facts concerning costs. In the meantime they felt that their method of obtaining final unit costs would not make them comparable with those obtained by other members of the industry. This same reasoning can, of course, be applied to the industry at large.

This distributor, in computing delivery costs, groups all classes of retail and wholesale sales together as well as the delivery costs accrued because of these sales. Instead, however, of showing these latter costs as an individual item, they are included with selling costs and the total is distributed to products. In keeping with the Commission's procedure of showing retail delivery costs and wholesale delivery costs as well as sales in these two classifications, the quantities of sales units shown in appendix table G, column (2), are the quantities given by the company less those sales which were strictly wholesale. Likewise, the amount of $36,604.04 is that portion of the total selling and delivery cost which has been identified with retail delivery activities.

The first thing done by the company is to assign the cost of 2 cents ($0.0200) shown in column (3) to the net quantities given in column (2). This amount is arbitrarily assigned and is what the company believes to approximate handling costs of the products to which it applies. Accordingly, it is multiplied by the respective net units of sale in column (2) resulting in the corresponding amounts for each product in column (7). The total of the amounts thus distributed is subtracted from the delivery expense of $36,604.04. The remainder of $35,187.60 is therefore that part to be absorbed by the other commodities.

This is accomplished by first subtracting the packages of the commodities from skim milk to orange juice, inclusive, namely, 70,822, from the total of all products. The deduction results in 827,816 packages. In order to distribute the $35,187.60 it is divided by 827,816 giving a quotient of $0.0425065 as an average to be used in distributing delivery expense by products. In other words it is assumed that all remaining products should absorb the delivery costs at the same rate per unit which is done by multiplying the rate by the net quantities in column (2). The results thus computed in column (7), when added, equal the amount distributed, namely, $35,187.60. This when added to $1,416.44 previously distributed equals the full amount of the delivery expenses.

It is obvious, of course, that the commission has again maintained the identity of the original units of sale throughout. The distributor, however, converts all products into quart equivalents, or shows them as original units in case of pounds, but this is done by products and not by units. According to the company's method, therefore, the final unit cost by products, and not by packages, is obtained by dividing the quantities shown in column (6) into the dollars shown in column (8) which gives the results as the company would obtain them in column (9). Similarly the commission's results in column (10) are the quotients of column (7) divided by column (5).

[15] It will be observed that with the exception of acidophilus milk the quantities are the same as originally.

APPENDIX TABLE G.—*Distributor 3: Distributor's method of distributing delivery costs to products (retail route sales, October 1935)*

Products	Unit of sale	Net quantity of units sold [1]	Expense per package used to accumulate expense by products [2]	Units used to compute final unit cost			Delivery costs distributed to products		Unit cost	
				Name [3]	Quantity [4]	Company's method of grouping [5]	Amount [6]	Company's method of grouping [7]	Using company's method [8]	Commission's computations [9]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pasteurized milk	Gallon	2,768½	$0.0425065	Quart equivalent	11,074	11,074	$117.68	$117.68	$0.0106	$0.0106
Do	Quart	484,183	.0425065	Quart equivalent	484,183		20,580.95			.0425
Do	Pint	64,794	.0425065	Quart equivalent	32,397		2,754.17			.0850
Do	½ pint	60,625	.0425065	Quart equivalent	15,156¼	531,736¾	2,576.96	25,912.08	.0487	.1700
Special milk	Quart	10,746	.0425065	Quart equivalent	10,746		456.77			.0425
Do	Pint	3,497	.0425065	Quart equivalent	1,748½		148.65			.0850
Do	½ pint	1,808	.0425065	Quart equivalent	452	12,946½	76.85	682.27	.0527	.1700
Cocoa drink	Quart	20,071	.0425065	Quart equivalent	20,071		853.15			.0425
Do	½ pint	23,661	.0425065	Quart equivalent	5,915¼	25,986¾	1,005.75	1,858.90	.0715	.1700
Special drink	Gallon	46	.0425065	Quart equivalent	184	184	1.96	1.96	.1065	.0106
Do	Quart	19	.0425065	Quart equivalent	19		.81			.0426
Do	½ pint	8,890	.0425065	Quart equivalent	2,222½	2,241½	377.88	378.69	.1689	.1700
Light cream	Quart	4,769	.0425065	Quart equivalent	4,769		202.71			.0425
Do	Pint	1,497	.0425065	Quart equivalent	748½		63.63			.0850
Do	½ pint	49,422	.0425065	Quart equivalent	12,355	17,872½	2,100.76	2,367.10	.1324	.1700
Heavy cream	Quart	766	.0425065	Quart equivalent	766		32.56			.0425
Do	Pint	305	.0425065	Quart equivalent	152½		12.96			.0850
Do	½ pint	4,035	.0425065	Quart equivalent	1,008¾	1,927¼	171.51	217.03	.1126	.1700
Plain buttermilk	Gallon	841½	.0425065	Quart equivalent	3,366	3,366	35.77	35.77	.0106	.0106
Do	Quart	18,160	.0425065	Quart equivalent	18,160		771.92			.0425
Do	½ pint	166	.0425065	Quart equivalent	41½	18,201½	7.06	778.98	.0428	.1701
Cream buttermilk	Gallon	135	.0425065	Quart equivalent	540	540	5.74	5.74	.0106	.0106
Do	Quart	1,672	.0425065	Quart equivalent	1,672		71.07			.0425
Do	Pint	2,625	.0425065	Quart equivalent	1,312½		111.58			.0850
Do	½ pint	24,805	.0425065	Quart equivalent	6,201¼	9,185¾	1,054.37	1,237.02	.1347	.1700
Natural buttermilk	Gallon	30	.0425065	Quart equivalent	120	120	1.28	1.28	.0107	.0107
Do	Quart	10,192	.0425065	Quart equivalent	10,192		433.23			.0425
Do	Pint	20	.0425065	Quart equivalent	10		.85			.0850
Do	½ pint	934	.0425065	Quart equivalent	233½	10,435½	39.70	473.78	.0454	.1700
Cheese	Pound	26,333	.0425065	Pound equivalent	26,333	26,333	1,119.32	1,119.32	.0425	.0425
Total		827,816			672,150	672,150	35,187.60	35,187.60		

Skim milk	Gallon	965	[10] .02000	Quart equivalent	3,860	3,860	[11] 19.30	19.30	.0050	.0050
Do	Quart	1,284	.02000	Quart equivalent	1,284	1,284	25.68	25.68	.0200	.0200
Ice-cream cream	Gallon	818	.02000	Quart equivalent	3,272	3,272	16.36	16.36	.0050	.0050
Certified milk	Quart	2,817	.02000	Quart equivalent	2,817		56.34			.0200
Do	Pint	1,279	.02000	Quart equivalent	639½	3,456½	25.58	81.92	.0237	.0400
Inspected milk	Quart	884	.02000	Quart equivalent	884		17.68			.0200
Do	Pint	1,342	.02000	Quart equivalent	671	1,555	26.84	44.52	.0286	.0400
Butter	Pound	49,623	.02000	Pound equivalent	49,623	49,623	992.46	992.46	.0200	.0200
Eggs	Dozen	11,340	.02000	Dozen	11,340	11,340	226.80	226.80	.0200	.0200
Miscellaneous:										
A	Jars	169	.02000	Package	169	169	3.38	3.38	.0200	.0200
B	Cans	40	.02000	Package	40	40	.80	.80	.0200	.0200
C	Quart	2	.02000	Quart equivalent	2	2	.04	.04	.0200	.0200
D	Tub	259	.02000	Tub	259	259	5.18	5.18	.0200	.0200
E	½ pint		.02000	Quart equivalent						
Total		70,822			74,860½	74,860½	1,416.44	1,416.44		
Grand total		898,638			747,010½	747,010½	36,604.04	36,604.04		

[1] Quantities remaining after deducting from totals shown by distributor all sales at company store, wholesale, and miscellaneous wholesale sales.
[2] Obtained by dividing $35,187.60 by 827,816, the latter being remainder after subtracting 70,822 from 898,638.
[3] Quart equivalents are computed by multiplying gallons by 4; quarts remaining as quarts; dividing pints by 2; and ½ pints by 4. Pound equivalents are all products sold in containers by weight converted to pounds, while other products retain their original unit designation.
[4] These quantities are those in column (2) converted according to method outlined in note 3.
[5] Instead of keeping identity of all sizes of products after conversion, the distributor grouped the equivalents by products.
[6] Obtained by multiplying quantities in column (2) from pasteurized milk to cheese, inclusive, by $0.0425065 (col. 3).
[7] Since the distributor groups equivalents by products, he does the same for expenses.
[8] The amounts in column (8) divided by quantities in column (6).
[9] The amounts in column (7) divided by quantities in column (5).
[10] Arbitrary amount assigned to the products shown by the distributor as being an approximation of the cost of handling per unit. This amount multiplied by units of products from skim milk to miscellaneous products, inclusive, gives corresponding amounts shown in column (7). The sum of these deducted from total delivery expense ($36,604.04) gives $35,187.60 (col. (7)) as remainder to be distributed to remaining products.
[11] Obtained by multiplying quantities in column (2) from skim milk to miscellaneous products, inclusive, by $0.02000 (col. 3).

Insofar as consistency is concerned the company used the identical method in computing wholesale unit costs.

As to the reasonableness of the method, it lacks accuracy which, as already stated, is acknowledged by the distributor involved. The first element of error is the arbitrary assignment of the 2 cents to the items shown. It could probably just as well be assumed, without any greater degree of error, that it would cost the same amount to handle each of the other commodities. Computations, however, show that after deducting the expense accumulated by use of the 2 cents and dividing the remaining units into the remaining expense ($35,187.60), the average expense per unit ($0.0425065) is slightly in excess of twice the assigned unit expense. It is apparent that all items accumulating costs according to this unit will receive twice as much proportionately as other items. The effect is somewhat analagous to that produced in the stop-point method when all items, other than milk, were reduced in quantity by one-half thereby loading an increased proportion of the costs on milk items, and in the case under discussion, also on cream.

Furthermore, an analogy may be observed in the effect of converting quantities to quart equivalents. In the stop-point method, in which the final step was the conversion to quart equivalents, the unit cost increased approximately inversely with the sizes of the units of sale when these were allowed to maintain their identity. They do likewise in this method, but the effect is not noticeable when the identities of the units are submerged. This fact, in addition to some of the other points discussed, should serve to indicate that the method under such circumstances cannot present a true statement of the cost to deliver a quart or any other sized bottle or container.

DISTRIBUTING DELIVERY COSTS TO PRODUCTS BY USE OF COMMISSION POINTS AND WEIGHTED SALES UNITS

Distributor 4 used a method similar to that of distributor 3 to show his delivery costs in that he grouped them in a combined expense classification known as "Selling and Delivery." In this grouping it would, of course, be impossible to ascertain what portion of any resulting unit expense was attributable to delivery and what portion to selling.

To bring out the importance of delivery expenses in this connection, as in analyses of other distributors who grouped their expenses so that no one of the expense items was distinguishable, the commission has selected those items of expense which it considered delivery expenses and which are similarly considered by the industry and deducted them from the total of selling and delivery expense shown by the company. Furthermore, from this amount were deducted certain delivery expenses of a branch which had a number of wholesale routes, the sales on which had been included by the distributor in his retail sales. The remainder after such deductions was $102,248.70 and is as accurate an amount as it was practicable to obtain that can reasonably be considered as retail delivery expense.

In the same manner all sales at this branch were subtracted from the sales shown as retail by the distributor resulting in the quantities shown in appendix table H, column (2). In the final analysis, therefore, as a working base the Commission has both retail sales and retail delivery expenses within what is believed to be a small degree of error.

In showing final unit costs the distributor converts all original sizes of containers into the equivalents shown in appendix table H, column (11). Obviously, such units have little value for use by the layman, and likewise are of little value for comparison with other distributors' costs. It is again a device that submerges the identity of the different units of sale. Accordingly, in order to translate the unit costs into more understandable terms, the Commission has distributed the total delivery expense using the same method employed by the company and has then maintained the identities of the original sized containers in computing the final unit costs.

APPENDIX TABLE H.—*Distributor 4: Distributor's method—Distributing delivery costs to products by use of commission points and weighted sales units (retail route sales, October 1935)*

Bulk processed products	Unit of sale	Net quantity of units sold	Unit value for commission points	Computed points to distribute commission to products	Total of commission points distributed to products	Unit value for distribution of selling expenses other than commissions	Computed points to distribute selling expense other than commissions	Total of delivery expense other than commissions	Total of commissions and other delivery assigned to products	Unit cost: Company's method of grouping: Commissions computation	Unit cost: Company's method of grouping: Name of equivalent	Unit cost: Company's method of grouping: Quantity	Unit cost: Company's method of grouping: Expense	Unit cost: Company's method of grouping: Company's unit cost
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Pasteurized milk	Gallon	48	[1] 4.00	[3] 192	[4] 0.58	2.00	[4] 96	[9] $3.92	[7] $4.50	[8] $0.0938	Gallons	48	$4.50	$0.0938
Skimmed milk	Gallon	189	4.00	756	2.30	2.00	378	15.45	17.75	.0939	Gallons	189	17.74	.0939
3-percent pasteurized cream	Gallon	9	6.00	54	.16	3.00	27	1.10	1.26	.1400	Points			
18-percent pasteurized cream	Gallon	2	6.00	12	.04	3.00	6	.25	.29	.1450	Points			
15-percent pasteurized cream	Gallon	99	6.00	594	1.81	3.00	297	12.14	13.95	.1409	Points	1,827	15.48	.0085
20-percent sour cream	Gallon	1	(2)		.04	3.00	3	.12	.16	.1600	Points			
Do	Gallon	35	(2)		.99	2.00	874	3.28	4.27	.1220	Points			
Do	Quart	11	(2)		.11	2.00	22	.90	1.01	.0918	Points	425	.84	.002
Bulk manufactured products:														
Orange drink	Gallon	108	4.00	432	1.31	2.00	216	8.83	10.14	.0939	Gallons	108	10.14	.0939
Cottage cheese	Gallon	11	(2)		.37	5.00	55	2.25	2.62	.2382	Gallons			
Do	1/2 gallon	28	(2)		.47	2.00	56	2.30	2.77	.1389	Gallons			
Do	Quart	66	(2)		.55	2.00	132	5.40	6.33	.1433	Gallons	4115	11.90	.2867
Creamed cheese	Gallon	2	(2)		.07	5.00	10	.41	.48	.2400	Gallons			
Do	1/2 gallon	14	(2)		.08	2.00	28	1.43	1.69	.1207	Gallons			
Do	Quart	9	(2)		.06	2.00	18	.82	.99	.1100	Gallons			
Special cheese	Quart	1	(2)		.01	2.00	2	.08	.09	.0900	Gallons	1115	3.06	.2676
Butter, packages	1/2 pound	86,077	1.00	86,077	261.70	1.00	86,077	3,516.69	3,780.39	.0439	Pounds	104,04915	4,560.25	.0438
Do	1/2 pound	35,945	.50	17,973	54.64	1.00	17,973	734.35	788.99	.0439	Pounds	11,483	504.27	.0439
Cottage cheese	16-ounce jars	11,483	1.00	11,483	34.91	1.00	11,483	469.41	504.32	.0439	Jars	11,483		
Creamed cheese	16-ounce jars	12,640	1.00	12,640	38.43	1.00	12,640	516.70	555.13	.0439	Jars	12,640	555.08	.0439
Special cheese	8-ounce jars	14,740	.50	7,370	22.41	.50	7,370	301.27	323.68	.0220	Jars	14,740	323.65	.0219

APPENDIX TABLE H.—*Distributor 4: Distributor's method—distributing delivery costs to products by use of commission points and weighted sales units (retail route sales, October 1935)*—Continued

Bulk processed products	Unit of sale	Net quantity of units sold [1]	Unit value for commission points	Computed points to distribute the commission to products	Total of commission expense distributed to products	Unit value for distribution of selling expenses other than commissions	Computed points to distribute selling expense other than commissions	Total delivery expense other than commissions	Total of commission and other delivery expense distributed to products	Unit cost				
										Company's method of grouping				
										Commissions computation	Name of equivalent	Quantity	Expense	Company's unit cost
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Bottled processed products:														
Pasteurized milk	Quart	1,433,278	1.00	1,433,278	4,357.71	1.00	1,433,278	$58,590.15	$12,947.86	$0.0439	Gallons			
Do	Pint	105,788	.50	52,894	160.82	1.00	105,788	4,324.45	4,485.27	.0424	Gallons			
Do	½ pint	7,740	.25	1,935	5.88	1.00	7,740	316.40	322.28	.0416	Gallons	372,026¾	$67,763.80	$0.1821
Certified S milk	Quart	5,194	1.00	5,194	15.79	1.00	5,194	212.32	228.11	.0439	Gallons			
Do	Pint	633	.50	317	.96	1.00	633	25.88	26.84	.0424	Gallons			
Certified T milk	Quart	1,150	1.00	1,150	3.50	1.00	1,150	47.01	50.51	.0439	Gallons			
Do	Pint	94	.50	47	.14	1.00	94	3.84	3.98	.0423	Gallons	1,676¾	309.41	.1845
High-test U milk	Quart	176,542	1.00	176,542	536.76	1.00	176,542	7,216.76	7,753.52	.0439	Gallons			
Do	Pint	13,317	.50	6,658	20.24	1.00	13,317	544.38	564.62	.0424	Gallons			
Do	½ pint	1,616	.25	404	1.23	1.00	1,616	66.06	67.29	.0416	Gallons			
High-test V milk	Quart	19,989	1.00	19,989	60.77	1.00	19,989	817.12	877.89	.0439	Gallons			
Do	Pint	356	.50	178	.54	1.00	356	14.55	15.09	.0424	Gallons	50,942⅞	9,277.50	.1821
40 percent pasteurized cream	Pint	136	2.00	272	.83	1.00	136	5.56	6.39	.0470	Points			
Do	½ pint	1	1.00	1	.01	1.00	1	.04	.05	.0500	Points			
34 percent pasteurized cream	Quart	108	4.00	432	1.31	1.00	108	4.41	5.72	.0530	Points			
Do	Pint	13,941	2.00	27,882	84.77	1.00	13,941	569.89	654.66	.0470	Points			
Do	½ pint	22,151	1.00	22,151	67.35	1.00	22,151	905.50	972.85	.0439	Points			
24 percent pasteurized cream	Quart	353	4.00	1,412	4.29	1.00	353	14.43	18.72	.0530	Points			
Do	Pint	35,503	2.00	71,006	215.89	1.00	35,503	1,451.31	1,667.20	.0470	Points			
Do	½ pint	176,204	1.00	176,204	535.73	1.00	176,204	7,202.94	7,738.67	.0439	Points			
Do	¼ pint	14,894	.50	7,447	22.64	1.00	14,894	608.84	631.48	.0424	Points			
18 percent pasteurized cream	Quart	11	4.00	44	.13	1.00	11	.45	.58	.0527	Points			
15 percent pasteurized cream	Quart	2,683	4.00	10,732	32.63	1.00	2,683	109.68	142.31	.0530	Points	493,081	11,837.09	.0240
20 percent sour cream	10-ounce jar	1,204	1.00	1,204	3.66	1.00	1,204	49.22	52.88	.0439				
Do	Pint	1	1.00	1	.01	1.00	1	.04	.06	.0500		1.771	52.92	.0299

Special brand milk	Quart	6,520	1.00	6,520	19.82	1.00	6,520	266.53	286.35	.0439	Gallons			
Do	Pint	61	.50	30.5	.09	1.00	61	2.49	2.58	.0423	Gallons	1,638	288.90	.1764
Bottled manufactured products:														
Acidophilous milk	Quart	398	1.00	398	1.21	1.00	398	16.27	17.48	.0439	Gallons			
Do	Pint	117	.50	58.5	.18	1.00	117	4.78	4.96	.0424	Gallons	114	22.43	.1968
Lactose	Quart	17,414	1.00	17,414	52.95	1.00	17,414	711.86	764.81	.0439	Gallons			
Do	Pint	2,601	.50	1,300.5	3.95	1.00	2,601	106.32	110.27	.0424	Gallons	4,679	875.00	.1870
Synthetic buttermilk	Quart	32,702	1.00	32,702	99.43	1.00	32,702	1,336.81	1,436.24	.0439	Gallons			
Do	Pint	78	.50	39	.12	1.00	78	3.19	3.31	.0424	Gallons			
Do	½ pint	139	.25	35	.11	1.00	139	5.68	5.79	.0417	Gallons	8,194	1,445.18	.1764
Special buttermilk	Quart	18,440	1.00	18,440	56.06	1.00	18,440	753.80	809.86	.0439	Gallons			
Do	½ pint	12	.25	3	.01	1.00	12	.49	.50	.0417	Gallons	4,611	810.27	.1757
Cocoa drink	Quart	46,756	1.00	46,756	142.16	1.00	46,756	1,911.31	2,053.47	.0439	Gallons			
Do	Pint	4,703	.50	2,351	7.15	1.00	4,703	192.25	199.40	.0424	Gallons			
Do	½ pint	15,144	.25	4,536	13.79	1.00	15,144	741.70	755.49	.0416	Gallons	13,411	3,008.12	.2243
Orange drink	Quart	7,228	1.00	7,228	21.98	1.00	7,228	295.47	317.45	.0439	Gallons			
Do	½ pint	5,391	.25	1,348	4.10	1.00	5,391	220.38	224.48	.0416	Gallons			
Do	¼ quart	6	.25	1.5	.01	1.00	6	.25	.26	.0433	Gallons	2,145	542.15	.2526
Grand total for all classifications		2,355,115		2,294,118	6,977.65		2,330,594	95,271.05	102,248.70				102,248.70	

[1] Quantities remaining after deducting from quantities shown by distributor all so-called retail sales at 1 branch which included considerable wholesale sales.
[2] A retail driver's monthly sales are converted to these points. For all points over a monthly base of 6,250 he is paid, in addition to a guaranteed salary, 1 cent per point. Products on which he receives a direct commission are not converted to points.
[3] Column (2) multiplied by column (3).
[4] The commission points (2,294,118) are divided into $6,977.65 less $2.65 (direct commission) resulting in an average expense of $0.003040384. This is multiplied by the quantities in column (4) to obtain the amounts in column (5).
[5] These quantities are obtained by multiplication of columns (2) and (6).
[6] To obtain these amounts the total of column (7) is divided into the total delivery expense other than commission, which gives an average of $0.040878433, which is in turn multiplied by the weighted sales units in column (7).
[7] The individual amounts are the result of cross addition of columns (5) and (8). The total of this column is that part of the selling and delivery expense as expressed by the distributor which the Commission considered as delivery expense. This is the remainder after deduction of the delivery expenses at the branch mentioned in note 1.
[8] The result of dividing individual amounts in column (9) by corresponding quantities in column (2).
[9] Direct.

The first step taken by the distributor is to separate the delivery costs into so-called commission costs and costs other than commissions shown, respectively, in columns (5) as $6,977.65 and (8) as $95,271.05. Following this break-down the commissions are distributed to products. As will be observed in column (5) a portion of this expense is charged directly to certain products and amounts to $2.65. This subtracted from $6,977.65 leaves $6,975 to be distributed to the other products. The manner in which this is accomplished is comparatively simple.

The total of 2,294,118 (column (4)) which is the result of converting the sales to commission points is divided into $6,975 giving an average expense of $0.003040384 which is in turn multiplied by each of the quantities making up the quantity of 2,294,118. The multiplication results in the corresponding amounts shown in column (5). The theory of this is that since this part of the expense was created by use of the values shown in column (3), it is reasonable to distribute it back to products proportionate to their importance in creating it. An explanation of this may be well at this point.

According to stipulations of the drivers' union, each retail driver is to receive a guaranteed salary per week and consequently per month. In return for this, the implication is that he will deliver 6,250 points per month.[16] For all points in excess of this fixed base he is to receive 1 cent per point, so that if he delivered 7,250 points during any given month, he would receive as a commission the difference between 7,250 and 6,250 multiplied by 1 cent or $10. In computing these points a driver's sales are multiplied by the respective values for different commodities shown in column (3), added, and the excess over 6,250 ascertained which is then paid for at the rate of 1 cent per point. Consequently, the distributor feels justified in using the same means to distribute the expense to products.

Insofar as is known the point values were originally based on relative values with the selling price of a quart bottle of pasteurized milk as the base. At one time the retail selling price was 14 cents, while at the same time the price of a one-half pint bottle of cream was the same or approximately the same. Therefore, since there are four one-half pints in a quart, a quart of cream relatively would be worth four times that of a quart of milk. Thus the value of 4.00 for cream in quart bottles.

A similar method is employed to distribute the remainder of $95,271.05. The net quantities (column (2)) are converted to those quantities shown in column (7) by multiplication with the unit values given in column (6). The total (2,330,594½) is divided into the amount to be distributed, namely, $95,271.05, resulting in an average expense per unit of $0.040878433. On the assumption that this applies equally to all modified units, each quantity in column (7) is multiplied with it thus obtaining the amounts in column (8) as that portion of expenses other than commission applicable to the respective products.

The values used for this purpose for bottled products are based on the theory that all such products are equally as difficult to deliver regardless of the size of container. Accordingly, they are given a value of 1.00 (column (6)). Products in bulk are given values which supposedly reflect their difficulty in delivering as compared with bottled products. The theory implies that all bottle containers and other packages take up the same space in a vehicle, with the variations appertaining to bulk again being reflected by the values assigned to bulk products.

The total for the respective products which was computed by the two methods discussed is obtained by adding columns (5) and (8) which gives the amounts in column (9). As a modification of the company's method, the Commission in computing the final unit costs divided each amount in the last named column by the corresponding quantities in column (2) which serves to give results comparable to those obtained by other distributors, presents these results in understandable terms, and at the same time probably shows true unit costs. There can be no doubt as to the comparability of unit costs with those computed for other companies, because in every other case original sizes have been maintained throughout.

To understand the unit costs which would be computed by the distributor and which are illustrated in columns (11), (12), (13), and (14), is not a simple matter. The consumer's natural idea of a unit is a quart of milk, and he rarely thinks of it sold at retail in gallons. Furthermore, "points" of cream would be meaningless to him as well as to the majority of milk experts, unless they knew what particular points were meant. Certainly, after perusing all the different kinds of points discussed in the various analyses thus far, it would be difficult to know offhand

[16] Articles of agreement, June 22, 1935, to May 31, 1938, Milk Wagon Drivers Union, Local No. 603, St. Louis, Mo.

which values had been used in connection with cream. In short, one is confronted with still another kind of point or unit, not heretofore discussed, which emphasizes the necessity of defining the meaning of the term whenever used.

With reference to gallons, the company's explanation of the use of this term is that it is the most understandable unit as a common denominator. Perhaps this is true insofar as it applies to those who deal in large quantities, but as previously pointed out, the consumer is accustomed to thinking in smaller units. The purpose of the "points" of cream, according to the claims of the distributor, is to make the unit understandable to those who deal in large quantities, or even more specifically, to obtain information in this manner solely for the distributor's use. Since cream in large quantities is usually purchased according to butterfat content, the point involved is a point, or a percent of butter fat. Thus a gallon of 30-percent cream would have 30 butterfat points, 34 percent would have 34 points, etc. In converting cream other than bulk, such as that in quarts, pints, one-half pints, etc., to points, these units are first converted to gallon equivalents and the latter in turn are multiplied by the respective tests. The following example shows how the 1,827 points (column 12) for bulk pasteurized cream were computed:

	Points
9 gallons at 34 percent	306
2 gallons at 18 percent	36
99 gallons at 15 percent	1,485
Total	1,827

The totals of such equivalents in column (12) are divided into the accumulated expenses by products in column (13) resulting in the unit costs in column (14).

It is apparent that the method has comparative simplicity in application in its favor in contradistinction to the other methods analyzed up to the computation of final unit costs. This is made possible by two simple conversions of quantities and consideration of only two groups of expenses. The method in distributing salaries likewise seems to be fairly reasonable.

As to the distribution of the remainder of the expenses, the method conforms in application with the principle observed in the Commission's package and cubic space method in that salaries as a group in the last-named method are distributed on a straight package basis while as distributed by distributor 4, they are a portion of expenses other than commissions and are accordingly distributed on a straight-package basis. However, with regard to salaries in the Commission's method, there is no differentiation between milk in bottles and in bulk though there is in the method used by the distributor under discussion. This is brought out later in this report.

Furthermore, as will be observed later, the Commission departs from the application of the method in this section to the extent that measurements and variations in number of containers in a case have shown that each unit of sale does not take up the same space. This, it will be recalled, is part of the theory in the present method which assigns a value of 1.00 to all bottled products as well as to other products except bulk.

The principal objection to the method under consideration, other than that it is believed space taken up by products should perhaps be considered in distributing costs, is the manner in showing the final unit costs, again of course with the qualification that, perhaps insofar as the distributor himself is concerned, it may have some justification. For the consuming public, however, and particularly where such costs may be used to meet complaints of the consumers, it seems that they should be in terms reecognized by those vitally affected. It is believed the probability of misunderstanding can well arise from a comparison of columns (10) and (14).

PACKAGE AND CUBIC SPACE METHOD OF DISTRIBUTING DELIVERY COSTS APPLIED TO COST AND SALES DATA OF DISTRIBUTOR 2

In a previous report by the Commission on the distribution of milk,[17] the package and cubic-space method was applied to the delivery costs and sales data of a number of companies in order that the resulting unit costs might be compared on a uniform basis as well as a more reasonable one than any that had been studied up to that time. Because of the multiplicity of methods used as ascertained in the investigation now being reported, the Commission has again resorted to this method as being reasonable and at the same time having simplicity of

[17] Milk Distribution Problems in Connecticut & Philadelphia, House Doc. No. 387, 74th Cong., 2d Sess., p. 96.

application as well as giving more nearly the true status of unit costs than the other methods examined. Analysis of this method will illustrate its ease of application and its consistency in maintaining the identity of the products by sizes of containers throughout, thereby giving results that are understandable in terms used by the consumer.

The first principle underlying the original and present application is that the aggregate salaries paid to individual drivers will differ very little from month to month over any length of time. It is well known, of course, that salaries of individuals differ considerably, but for the same person, with some exceptions, of course, this variation is probably negligible as a percentage change. Consequently, the company has a fairly consistent pay roll from month to month during normal business periods, and because of this the salaries paid might well be considered as flat or fixed wages. Such a condition was particularly found in six of the seven companies whose unit delivery costs were studied in detail. Observation of these costs showed that the aggregate commissions and bonuses paid to drivers were a small percentage of aggregate salaries and commissions combined. In other words, the remainder of the drivers' remuneration consisted of a fixed weekly wage stipulated by the union and, accordingly, could vary in the aggregate only as more or fewer drivers were employed. One more point with respect to the distribution of salaries is that there is very little, and in all probability no difference in effort to deliver a one-half pint container, or a pint container as compared with a quart container. The same holds true for every other package of milk or milk product. Accordingly, it seems reasonable to assume that, since salaries are comparatively fixed and, since there is little, if any, difference in difficulty of delivery of the different bottles and packages of milk, the former can just as well be distributed considering a unit of sale as a package. Undoubtedly, there is some difference in effort in delivering a 40-quart can of milk and a quart bottle of mik, but, if a gallon of milk is related to a quart bottle, it would mean that 10 gallons in a can would be equal to 10 bottles of milk. It is felt that the effort and time required to deliver 10 quarts of milk on the usual retail route might approximate that to carry a 10-gallon can into a store or a restaurant. If this is true then a gallon may reasonably be treated as a package also, which has been done in applying the package and cubic-space method.

On a package basis, then, all labor is divided by the total packages delivered and distributed to products according to the number of packages of each product sold, as is explained later.[18]

The principle of the method employed by distributor 4 conforms in part with the principle just expressed for the package and cubic-space method. This occurs in the distribution of the expenses other than commissions, a large part of which is composed of salaries. As will be observed by referring to section 5, this distribution is made largely on a straight package basis with some variation in bulk products. The principle is further supported by the method used by distributor 4 in that, while two different average-expense units are employed in computations, the expenses to products are distributed on a straight package or unit-of-sale basis. However, this applies not only to salaries, but also to the entire delivery costs. Therefore, it would seem that if there is an error in the principle of distributing only salaries on a package basis the error is on the conservative side.

Now as to expenses other than salaries. It is a fairly well recognized cost-accounting principle that objects taking up space in a building should be charged with the same proportion of the rent as the space taken up bears to the total available space. Applying this same principle to milk distribution, it seems reasonable that commodities carried in a vehicle should bear that proportion of the expense charged against the available space, as the space required by them bears to the available space. Carrying this reasoning further, it appears that, since the operating expense of a vehicle is incurred in order to carry around a certain given amount of space which is occupied by commodities supposedly of income-producing possibilities, then such space should be charged with the entire amount of the expense incurred. Then in accordance with the space-expense principle the items in the space should bear their share of the expense in accordance to the space occupied by them.

Viewed from another angle, the expense of transporting these milk and other products from the plant to the beginning of a route and along the route, and of transporting their cases and other containers (inclusive of the returned empty

[18] The method here described is the method applied to obtain the results shown in the table presented in connection with this appendix text. However, in obtaining the results shown in ch. V, table 27, a portion of the route men's remuneration was transferred to transportation expense and apportioned on the cubic-space basis.

bottles and cans) around the whole route back to the plant, is caused by the gross weights of the delivered products. Included in these gross weights are the weights not only of the bottles and other direct containers but also of the cases in which the various sized bottles are carried in the vehicle. So that transportation expense, inclusive not only of the vehicle expense but of an appropriate part of the remuneration of the driver or chauffeur, might logically be divided among the delivered products on the basis of average gross weights of the respective sizes of package. However, most of these products are of nearly the same specific gravity; so that the average gross weights of the respective packages are approximately proportional to gross cubic spaces occupied by them. Thus gross weight per package and cubic space per package yield approximately the same results in apportioning transportation expense.

As is well illustrated by a number of tables exhibited in this report, the ordinary milk-route vehicle has a multiplicity of different commodities and sizes of commodities, carried in different kinds of cases. For example, in most companies the cubic space occupied by a quart, pint, or one-half-pint case differs considerably. Likewise, the number of units in each of these cases is usually 12, 20, and 30, respectively. This indicates the difficulties arising in the choice of a common denominator, and emphasizes the fact that the usual denominator, a case, is not well selected. Inasmuch as a quart of milk is a well-known unit, and since there are 12 quart containers in a case, one-twelfth of the cubic space consumed by a case is considered as the cubic space-unit or 1, as shown in appendix table I, column (3). For products delivered in pint, one-half pint, and other bottles or containers, one-twentieth of the cubic space of a pint case, one-thirtieth of that of a one-half-pint case, etc., are expressed as relatives of that for a quart container. In the case of bulk milk the gallon is the unit; therefore, the relative will vary according to the number of gallons in a can. It will be noticed that in expressing the units in this way, the usual relation of quarts as 1, pints as one-half, and half-pints as one-fourth does not hold and the difference when applied to a number of units can appreciably affect the results.

Obviously, there are other expenses in addition to salaries and vehicle expenses as already mentioned. These consist of such items as depreciation of milk bottles, cases, and cans, telephone calls by the driver, refrigeration, power, and light, all of which are comparatively small in amount. Therefore, they have been added to vehicle expense and distributed in the same manner.

Assuming that this method is sound in principle, it also has in its favor, ease of application which is fairly well reflected in the short space required to explain it.

As illustrated in appendix table I, the total delivery expenses have been divided into $4,450.88, and $11,926.58 and are the sums of columns (6) and (8), respectively. To convert the sales to cubic space units column (2) is multiplied by the values given in column (3), resulting in the quantities in column (4).

The sum of the individual quantities (328,717.7036) is divided into the expense other than salaries ($4,450.88) giving an average of $0.01354013 (column (5)) which when multiplied by the individual quantities in column (4) results in those portions of $4,450.88 that are applicable and assigned to the respective products as noted in column (6). In a similar manner the total of column (2) or 413,936, is divided into the labor expense ($11,926.58) [19] giving an average of $0.02881262 which when multiplied by the respective quantities in column (2) results in the portions of the labor costs that are applicable and assigned to the respective products.

The two portions of the expenses by products and sizes of containers are added to obtain the amounts in column (9), the total of which is the full delivery costs. The final unit cost of delivery is then obtained by a simple division of each of the amounts just mentioned by the numbers of the respective products and sizes of containers in column (2).

A careful study of the costs as shown compared with costs obtained by the stop-point method by the same distributor in appendix table F2 will serve to emphasize the fact that the package and cubic-space method probably gives a closer approximation to the true costs of delivery of the respective products in their various sizes and shapes of package.

	Amount
Delivery labor	$11,926.58
Other expenses	4,450.88
Total	16,377.46

[19] Actually a portion of the route operative's remuneration was properly assignable to the other group of expenses. The results of such a transfer are shown in ch. V, table 27.

APPENDIX TABLE I.—*Package and cubic-space method of distributing delivery costs applied to cost and sales data of distributor 2 (retail route sales, October 1935)*

Products	Unit of sale	Net sales units	Ratio of cubic space occupied (1 quart = 1.00) [1]	Cubic space units used to distribute costs other than labor [2]	Average of costs other than labor per cubic space unit [3]	Total of costs other than labor distributed to products [4]	Average cost of delivery labor per unit [5]	Total of delivery labor distributed to products [6]	Total of delivery labor costs and other costs distributed to products [7]	Unit cost [8]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Pasteurized milk	Gallon	502	1.5904	798.3808	$0.01354013	$10.81	$0.02881262	$14.46	$25.27	$0.0503
Do	Quart	246,228	1.0000	246,228.0000	.01354013	3,333.96	.02881262	7,094.48	10,428.44	.0424
Do	Pint	32,438	.4954	16,069.7852	.01354013	217.59	.02881262	934.63	1,152.22	.0355
Do	½ pint	5,851	.2665	1,559.2915	.01354013	21.12	.02881262	168.58	189.70	.0324
Special milk	Quart	16,007	1.0000	16,007.0000	.01354013	216.74	.02881262	461.20	677.94	.0424
Do	Pint	4,372	.4954	2,165.8888	.01354013	29.33	.02881262	125.97	155.30	.0355
Do	½ pint	31	.2665	8.2615	.01354013	.11	.02881262	.89	1.00	.0323
Certified and inspected	Quart	1,605	1.0000	1,605.0000	.01354013	21.74	.02881262	46.24	67.98	.0424
Do	Pint	895	.4954	443.3830	.01354013	6.00	.02881262	25.79	31.79	.0355
Light cream	Gallon	14	1.5904	22.2656	.01354013	.30	.02881262	.40	.70	.0500
Do	Quart	1,003	1.0000	1,003.0000	.01354013	13.58	.02881262	28.90	42.48	.0424
Do	Pint	822	.4954	407.2188	.01354013	5.51	.02881262	23.68	29.19	.0355
Do	½ pint	30,526	.2665	8,135.1790	.01354013	110.16	.02881262	879.53	989.69	.0324
Heavy cream	Gallon	1	1.5904	1.5904	.01354013	.02	.02881262	.03	.05	.0500
Do	Quart	55	1.0000	55.0000	.01354013	.74	.02881262	1.58	2.32	.0422
Do	Pint	57	.4954	28.2378	.01354013	.38	.02881262	1.64	2.02	.0354
Do	½ pint	2,644	.2665	704.6260	.01354013	9.54	.02881262	76.18	85.72	.0324
Sour cream	Jars	305	.1326	4.0443	.01354013	.55	.02881262	8.79	9.34	.0306
Skim milk	Gallon	229	1.5904	364.2016	.01354013	4.93	.02881262	6.60	11.53	.0503
Do	Quart	775	1.0000	775.0000	.01354013	10.49	.02881262	22.33	32.82	.0423
Creamed buttermilk	Gallon	12	1.5904	19.0848	.01354013	.26	.02881262	.35	.61	.0508
Do	Quart	1,857	1.0000	1,857.0000	.01354013	45.14	.02881262	53.51	78.65	.0424
Do	½ pint	70	.2665	18.6550	.01354013	.25	.02881262	2.02	2.27	.0324
Plain buttermilk	Gallon	179	1.5904	284.6816	.01354013	3.85	.02881262	5.16	9.01	.0503
Do	Quart	9,239	1.0000	9,239.0000	.01354013	125.10	.02881262	266.20	391.30	.0424
Do	Pint	550	.4954	272.4700	.01354013	3.69	.02881262	15.85	19.54	.0355
Cocoa milk	Quart	8,751	1.0000	8,751.0000	.01354013	118.49	.02881262	252.14	370.63	.0424
Do	Pint	2,824	.4954	1,399.0096	.01354013	18.94	.02881262	81.37	100.31	.0355
Do	½ pint	3,759	.2665	1,001.7735	.01354013	13.56	.02881262	108.31	121.87	.0324
Acidophilous	Pint	42	.4954	20.8068	.01354013	.28	.02881262	1.21	1.49	.0355
Lactic	Pint	401	.4954	198.6554	.01354013	2.69	.02881262	11.55	14.24	.0355
Butter:										
Salt	Pounds	13,609	.1437	1,955.6133	.01354013	26.48	.02881262	392.11	418.59	.0308
Sweet	Pounds	2,671	.1437	383.8227	.01354013	5.20	.02881262	76.96	82.16	.0308
Special	Pounds	1,514	.1437	217.5618	.01354013	2.95	.02881262	43.62	46.57	.0308

Creamed cottage cheese	10-pound gallon container.	730	.1583	115.5590	.01354013	1.56	.02881262	21.03	22.59	.0309
Do	5-pound carton	2,680	.1512	405.2160	.01354013	5.49	.02881262	77.22	82.71	.0309
Do	3-pound carton	261	.1508	39.3588	.01354013	.53	.02881262	7.52	8.05	.0308
Do	Jars	8,920	.1804	1,609.1680	.01354013	21.79	.02881262	257.01	278.80	.0313
Plain cottage cheese	10-pound gallon container.	100	.1583	15.8300	.01354013	.21	.02881262	2.88	3.09	.0309
Do	3-pound carton	24	.1508	3.6192	.01354013	.05	.02881262	.69	.74	.0308
Do	Jars	43	.1804	7.7572	.01354013	.11	.02881262	1.24	1.35	.0314
Eggs	Dozen	8,057	.4765	3,839.1605	.01354013	51.98	.02881262	232.14	284.12	.0353
Chocolate malted milk:										
1-pound	Pounds	2	.2056	.4112	.01354013	.01	.02881262	.06	.07	.0350
2-pound	Pounds	3,248	.1934	628.1632	.01354013	8.51	.02881262	93.58	102.09	.0314
5-pound	Pounds	25	.2446	6.1150	.01354013	.08	.02881262	.72	.80	.0320
1-pound comb	Pounds	7	.8932	6.2524	.01354013	.08	.02881262	.20	.28	.0400
Plain malted milk	Pounds	1	.2056	.2056	.01354013	----------	.02881262	.03	.03	.0300
Total		413,936	----------	328,717.7036	----------	4,450.88	----------	11,926.58	16,377.46	----------

[1] One-twelfth of the cubic space taken up by a case containing 12 quart bottles is used as the base for computing cubic space units for other bottles and packages. The cubic space taken up by 1 bottle in each different sized case and by each of the other packages of products are expressed as relatives of that for a quart bottle.

[2] Column (2) multiplied by column (3).

[3] Costs or expenses other than labor ($4,450.88) divided by total of column (4).

[4] Column (4) multiplied by column (5). Owing to the fact that the average of costs other than labor per cubic space unit ($0.01354013) is computed only to 8 places the sum of the multiplications of columns (4) and (5) does not equal $4,450.88. The comparatively small difference is distributed to the larger amounts. This has no effect on final unit costs.

[5] Delivery labor ($11,926.58) divided by total of column (2).

[6] Column (2) multiplied by column (7). The same explanation given in note 4 applies to the total of delivery labor.

[7] Sum of columns (6) and (8).

[8] Column (9) divided by column (2).

72440—36——18

In its effort to present the facts concerning this problem as correctly as possible, the Commission has under consideration a further refinement of the package and cubic-space method, which while furthering its accuracy, nevertheless will preserve its ease of application. This has to do with drivers' salaries. While a driver supposedly receives his salary for delivering milk, the fact is mostly disregarded that only a part of the total time spent by him during any working day is used for this purpose, the remainder being used for supposed selling activities, collections, receiving his load, arranging his load, bookkeeping, and moving his vehicle from customer to customer, or from stop to stop. A study that has come to the Commission's attention shows that the average time in moving the vehicle was 29.59 percent of the day for a motor-vehicle driver and 27.45 percent for a horse-and-wagon driver. Inferentially then, it appears plausible that only a portion of the salary is chargeable to activities purely of a delivery nature and the remainder logically should accrue to expenses pertaining to the vehicle itself.[20] This means in each case that that portion now considered as salaries and distributed on a package basis would be reduced by the percentage of the time consumed in moving the vehicle. This difference would be added to that amount now distributed on a cubic-space basis. Preliminary tests of these changes have indicated a moderate difference in unit costs [21] and if the investigation is continued will receive further consideration.

APPENDIX TABLE 1.—*Country receiving station allowances and operating costs compared, year 1935*

Item and description	Boston market			
	Quantity of milk purchased at country stations	Total amount	Average amount	
			Per hundredweight	Per producer [1]
Fluid milk:	*Pounds*	*Dollars*	*Cents*	*Dollars*
Allowance	218,774,462	469,673.38	21.468	73.76
Cost	218,774,462	264,406.35	12.086	41.52
Excess of allowance over cost	218,774,462	205,267.03	9.382	32.24
All other milk:				
Allowance	151,357,041			
Cost	151,357,041	179,257.86	11.843	28.15
Excess of allowance over cost	151,357,041	[2] 179,257.86	[2] 11.843	[2] 28.15
Total:				
Allowance	370,131,503	469,673.38	12.689	73.76
Cost	370,131,503	443,664.21	11.987	69.67
Excess of allowance over cost	370,131,503	26,009.17	.702	4.09

[1] Computed on basis of 6,368 producers delivering to country stations.
[2] Denotes red figures.

[20] Most of the expense attachable to the driver's time and effort consumed in recording deliveries to his respective customers, accumulating his records, pricing the various packages delivered, preparing the customer's bill, collecting it, and in remitting and accounting to the milk distributor, is created on a package basis, and, therefore, is assignable on that basis. The same applies to the route-accounting activities in the company's office.

[21] The results of these tests are disclosed by comparison of the unit expenses shown in ch. V, table 27, with the corresponding unit expenses shown in appendix table 13 and are discussed briefly on pp. 176–177 of the text. In accordance with the method used, the percentages of 29.59 and 27.45 were applied to the remuneration of the motor-vehicle routemen and horse-and-wagon routemen, respectively, of the 7 distributors shown, and the resulting amounts added to expenses other than labor for distribution on the cubic-space basis. However, as pointed out in the text, the percentages obtained from time studies on 1 distributor's routes are, at best, only approximately applicable to those of another. In order to obtain more nearly accurate bases on which to distribute the routemen's remuneration to products, so that the results will reflect the conditions found on his routes, each distributor must make his own time studies.

APPENDIX TABLE 1.—*Country receiving station allowances and operating costs compared, year 1935*—Continued

Item and description	Baltimore market			
	Quantity of milk purchased at country stations	Total amount	Average amount	
			Per hundredweight	Per producer [3]
Fluid milk:	*Pounds*	*Dollars*	*Cents*	*Dollars*
Allowance	67,030,533	155,884.96	23.256	86.61
Cost	67,030,533	74,209.50	11.071	41.23
Excess of allowance over cost	67,030,533	81,675.46	12.185	45.38
All other milk:				
Allowance	30,166,280	70,154.14	23.254	38.97
Cost	30,166,280	33,397.09	11.071	18.55
Excess of allowance over cost	30,166,280	36,757.05	12.185	20.42
Total:				
Allowance	97,196,813	226,039.10	23.256	125.58
Cost	97,196,813	107,606.59	11.071	59.78
Excess of allowance over cost	97,196,813	118,432.51	12.185	65.80

Item and description	St. Louis market			
	Quantity of milk purchased at country stations	Total amount	Average amount	
			Per hundredweight	Per producer [4]
Fluid milk:	*Pounds*	*Dollars*	*Cents*	*Dollars*
Allowance	43,979,610			
Cost	43,979,610	63,764.97	14.499	18.14
Excess of allowance over cost	43,979,610	[3] 63,764.97	[3] 14.499	[3] 18.14
All other milk:				
Allowance	91,852,815			
Cost	91,852,815	110,288.47	12.007	31.38
Excess of allowance over cost	91,852,815	[3] 110,288.47	[3] 12.007	[3] 31.38
Total:				
Allowance	135,832,425			
Cost	135,832,425	174,053.44	12.814	49.52
Excess of allowance over cost	135,832,425	[3] 174,053.44	[3] 12.814	[3] 49.52

[3] Denotes red figures.
[4] Computed on basis of 1,800 producers delivering to country stations.
[5] Computed on basis of 3,515 producers delivering to country stations.

APPENDIX TABLE 2.—*Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1930*

Income and expenses of milk divisions	Combined milk division of two companies in Baltimore [1]	Combined milk division of four companies in Cincinnati	Combined milk division of three companies in St. Louis [1]	Combined milk division of two companies in Boston
	Percent	*Percent*	*Percent*	*Percent*
Total net sales	100.0	100.0	100.0	100.0
Cost of raw materials	56.5	53.5	53.5	59.3
Gross spread	43.5	46.5	46.5	40.7
Processing expense	8.9	9.5	11.4	11.2
Delivery expense	17.5	25.1	24.2	19.9
Selling expense	3.1	3.0	2.3	2.0
Administrative and general expense	2.8	4.0	2.7	1.9
Total selling, administrative, and general expense	5.9	7.0	5.0	3.9
Total cost, exclusive of raw materials	32.3	41.6	40.6	35.0
Total cost and expenses	88.8	95.1	94.1	94.3
Less discount on purchases	0.0	.2	.2	.1
Cost of sales	88.8	94.9	93.9	94.2
Net profit from operations	11.2	5.1	6.1	5.8

[1] Figures are for 1931, used for only 1 company.

APPENDIX TABLE 3.—*Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1933*

Income and expenses of milk divisions	Combined milk division of two companies in Baltimore [1]	Combined milk division of four companies in Cincinnati	Combined milk division of three companies in St. Louis	Combined milk division of two companies in Boston
	Percent	*Percent*	*Percent*	*Percent*
Total net sales	100.0	100.0	100.0	100.0
Cost of raw materials	55.3	43.9	43.8	55.5
Gross spread	44.7	56.1	56.2	44.5
Processing expense	6.2	14.0	14.8	8.0
Delivery expense	25.8	31.5	31.7	25.4
Selling expense	3.5	4.1	4.5	2.6
Administrative and general expense	3.2	5.4	3.8	2.2
Total selling, administrative, and general expense	6.7	9.5	8.3	4.8
Total cost, exclusive of raw materials	38.7	55.0	54.8	38.2
Total cost and expenses	94.0	98.9	98.6	93.7
Less discount on purchases	.1	.1	.2	.1
Cost of sales	93.9	98.8	98.4	93.6
Net profit from operations	6.1	1.2	1.6	6.4

[1] Figures for 1 company only.

APPENDIX TABLE 4.—*Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1934*

Income and expenses of milk divisions	Combined milk division of two companies in Baltimore	Combined milk division of four companies in Cincinnati	Combined milk division of three companies in St. Louis	Combined milk division of two companies in Boston
	Percent	*Percent*	*Percent*	*Percent*
Total net sales	100.0	100.0	100.0	100.0
Cost of raw materials	52.7	46.2	50.2	63.2
Gross spread	47.3	53.8	49.8	36.8
Processing expense	9.5	12.5	13.8	7.6
Delivery expense	23.6	27.9	28.6	25.5
Selling expense	3.4	3.8	4.2	2.4
Administrative and general expense	3.5	4.8	3.3	2.0
Total selling, administrative, and general expense	6.9	8.6	7.5	4.4
Total cost, exclusive of raw materials	40.0	49.0	49.9	37.5
Total cost and expenses	92.7	95.2	100.1	100.7
Less discount on purchases	.1	.1	.2	.1
Cost of sales	92.6	95.1	99.9	100.6
Net profit from operations	7.4	4.9	.1	[1].6

[1] Indicates a loss.

APPENDIX TABLE 5.—*Comparative statement of the ratios of expenses to net sales of the milk division based on figures combined for all companies in each locality for the year 1935*

Income and expenses of milk divisions	Combined milk division of two companies in Baltimore	Combined milk division of four companies in Cincinnati	Combined milk division of three companies in St. Louis	Combined milk division of two companies in Boston
	Percent	*Percent*	*Percent*	*Percent*
Total net sales	100.0	100.0	100.0	100.0
Cost of raw materials	55.6	47.8	51.8	62.4
Gross spread	44.4	52.2	48.2	37.6
Processing expense	9.9	12.0	12.2	7.2
Delivery expense	21.9	27.3	30.7	24.0
Selling expense	3.7	3.5	3.5	2.1
Administrative and general expense	2.9	4.5	3.3	1.9
Total selling, administrative, and general expense	6.6	8.0	6.8	4.0
Total cost, exclusive of raw materials	38.4	47.3	49.7	35.2
Total cost and expense	94.0	95.1	101.5	97.6
Less discount on purchases	0.0	.1	.1	.2
Cost of sales	94.0	95.0	101.4	97.4
Net profit from operations	6.0	5.0	[1] 1.4	2.6

[1] Indicates a loss.

APPENDIX TABLE 6.—*Distributor A: Retail and wholesale delivery expenses and their division with reference to bases of distribution to products delivered, October 1935*

	Retail delivery expense		Wholesale delivery expense	
	Amount	Percent	Amount	Percent
Shippers and checkers	$5,399.08	4.03	$210.35	5.98
Chauffeurs and helpers	8,538.32	6.37	1,499.25	42.65
Horse drivers and helpers	13,664.25	10.20		
Route foreman	14,874.80	11.11	177.15	5.04
Supervision	3,413.70	2.55	133.00	3.78
Cartons, etc	9.28	.01	.36	.01
Miscellaneous supplies and expenses	604.52	.45	15.55	.44
Auto expense	13,446.61	10.04	892.97	25.40
Stable expense	18,652.73	13.93		
Bond insurance	103.66	.08	4.04	.12
Licenses	54.86	.04	2.14	.06
Telephone and order department	148.18	.11	5.77	.16
Branch repairs	552.52	.41		
Branch depreciation	410.73	.31		
Branch rent	10.00	.01		
Branch insurance	1,657.07	1.24	39.67	1.13
Branch taxes	161.07	.12		
Profit and loss—sale of capital assets	85.00	.06		
Shortages unsecured	−200.00	.15		
Subtotal	81,586.38	60.92		
Less—value of service rendered to another distributor	100.58	.08		
Stop-point dividend	81,485.80	60.84	2,980.25	84.77
Ice manufactured	1,042.96	.78	42.44	1.21
Branch power and refrigeration	666.68	.50		
Total	1,709.64	1.28		
Commissions (distributed on net sales basis)	30,118.90	22.49		
Special product bonus (allocated to special products)	2,650.40	1.98		
Milk bonus (allocated to milk)	4,970.00	3.71		
Bottle expense	9,050.72	6.76	324.98	9.25
Bottle exchange	1,214.82	.91	43.67	1.24
Case repairs	347.98	.26	12.51	.36
Case depreciation	1,296.29	.97	46.60	1.33
Butter-box repairs (allocated to butter)	4.29	.00		
Can depreciation	57.13	.04	64.75	1.84
Cartons, bags, etc. (special product)	45.48	.03		
Breakage (loss of product through breakage allocated to specific products)	975.74	.73		
Grand total	133,927.19	100.00	3,515.20	100.00
Distributed to products on package basis	83,629.45	62.44	2,019.75	57.46
Distributed to products on cubic-space basis	50,297.74	37.56	1,495.45	42.54
Total	133,927.19	100.00	3,515.20	100.00

APPENDIX TABLE 7.—*Distributor B: Retail and wholesale delivery expenses and their division with reference to bases of distribution to products delivered, October 1935*

	Retail delivery expense		Wholesale delivery expense	
	Total	Percent	Total	Percent
Labor:				
Shippers and checkers	$795.38	4.86	$281.85	10.83
Chauffeurs and helpers	9,352.93	57.11	1,334.55	51.30
Horse drivers and helpers				
Commissions	629.16	3.84		
Employees' allowances	191.23	1.17	67.73	2.60
Route foremen	686.68	4.19	243.32	9.35
Supervision	271.20	1.65	96.14	3.70
Total labor	11,926.58	72.82	2,023.59	77.78
Operating services and supplies:				
Ice manufactured	67.45	.41	23.89	.92
Ice purchased				
Bottle expense	725.43	4.43		
Bottle exchange	176.50	1.08		
Cartons, paper, twine, etc	22.14	.14	7.86	.30
Miscellaneous supplies and expense	30.14	.18	10.72	.41
Telephone	10.15	.06	3.60	.14
Subtotal	1,031.81	6.30	46.07	1.77
Transportation:				
Tolls and ferriage				
Freight, express, and cartage			30.50	1.17
Auto expense	3,304.26	20.18	451.20	17.34
Stable expense				
Subtotal	3,304.26	20.18	481.70	18.51
Unclassified:				
Licenses				
Shortages unsecured	83.02	.51	15.55	.60
Subtotal	83.02	.51	15.55	.60
Fixed charges:				
Depreciation, milk cabinets				
Depreciation milk cans and jackets			23.57	.91
Milk cases	31.79	.19	11.27	.43
Insurance, compensation, etc				
Subtotal	31.79	.19	34.84	1.34
Total other than labor	4,450.88	27.18	578.16	22.22
Grand total	16,377.46	100.00	2,601.75	100.00
Distributed to products on package basis	11,926.58	72.82	2,023.59	77.78
Distributed to products on cubic space basis	4,450.88	27.18	578.16	22.22
Total	16,377.46	100.00	2,601.75	100.00

APPENDIX TABLE 8.—*Distributor C: Retail and wholesale delivery expenses and their division with reference to bases of distribution to products delivered October 1935*

	Retail delivery expense		Wholesale dellvery expense	
	Amount	Percent	Amount	Percent
Labor:				
Supervision	$1,491.14	1.46	$562.50	1.72
Clerical	3,359.30	3.28	501.55	1.53
Cooler	1,853.20	1.81		
Foreman	4,704.95	4.60	1,273.94	3.89
Drivers, chauffeurs and helpers	51,575.50	50.44	12,451.25	38.01
Bonus	589.19	.58	552.09	1.68
Commission	6,977.65	6.82	2,902.37	8.86
Loading platform	2,328.44	2.28	2,934.54	8.96
Accounts receivable	967.55	.95	357.03	1.09
Credits and collections	1,390.69	1.36	280.29	.86
Total, labor	75,237.61	73.58	21,815.56	66.60
Vehicle service	20,088.18	19.65	3,621.71	11.06
Trucking	1,882.04	1.84		
Laundry	138.04	.14	32.90	.10
Ice	650.50	.64	.79	
Operating supplies	608.81	.60	5,228.40	15.96
Repairs, construction, and supplies	2.79		19.98	.06
Repairs	27.09	.03	211.73	.65
Rentals	596.75	.58	1,249.69	3.82
Services—Purchased and supplied	474.69	.46	37.18	.12
Transportation	350.84	.34	122.24	.37
Communication	186.85	.18		
Professional services	35.00	.03		
Unclassified expenses	189.45	.19	69.75	.21
Fixed expenses	1,780.06	1.74	344.95	1.05
Total, other than labor	27,011.09	26.42	10,939.30	33.40
Grand total	102,248.70	100.00	32,754.86	100.00
Distributed products to package basis	75,237.61	73.58	21,815.56	66.60
Distributed products to cubic space basis	27,011.09	26.42	10,939.30	33.40
Total	102,248.70	100.00	32,754.86	100.00

APPENDIX TABLE 9.—*Distributor D: Details of "Selling Expense" and allocation of details to selling expenses, retail delivery expense, wholesale delivery expense, and other subclassifications*

	Selling expense	Allocation					
		Sales expense	Miscellaneous	Retail delivery	Percent	Wholesale delivery	Percent
Supplies	$88.22	$58.82		$23.43	0.07	$5.97	0.28
Labor:							
Shipping salaries	1,815.46			1,446.92	3.95	368.54	17.13
Driver's salaries	19,910.53			19,564.46	53.45	346.07	16.08
Salesmen's salaries	893.62	893.62					
Drivers' bonuses	1,340.62			1,340.62	3.66		
Office salaries	2,061.19			1,642.77	4.49	418.42	19.45
Bad debts	910.41		$910.41				
Transportation (purchased)	187.47			187.47	.51		
Repairs	32.76			26.11	.07	6.65	.31
Depreciation	63.66			50.74	.14	12.92	.60
Rentals	205.47			163.76	.45	41.71	1.94
Taxes	38.49			30.68	.08	7.81	.36
Insurance	102.31			81.54	.22	20.77	.96
Communications	100.62			100.62	.28		
Unclassified	569.99			454.28	1.24	115.71	5.38
Publicity and advertising	1,611.68	1,611.68					
Professional	115.25	115.25					
Repairs supplied:							
Auto shop	4.70			4.70	.01		
Tin shop	132.55			105.64	.29	26.91	1.25
General repairs	15.18			15.18	.04		

APPENDIX TABLE 9.—*Distributor D: Details of "Selling Expense" and allocation of details to selling expenses, retail delivery expense, wholesale delivery expense, and other subclassifications*—Continued.

	Selling expense	Allocation					
		Sales expense	Miscellaneous	Retail delivery	Percent	Wholesale delivery	Percent
Services supplied:							
Print shop	$125.63			$100.13	0.27	$25.50	$1.19
Building	149.15			118.87	.33	30.28	1.41
Milk cans	259.60					259.60	12.06
Cases and bottles	1,658.31			1,340.61	3.66	317.70	14.77
Delivery (vehicle expense)	9,742.46			9,595.51	26.22	146.95	6.83
Ice	210.00			210.00	.57		
Total	42,345.33			36,604.04	100.00	2,151.51	100.00
Distributed to products on package basis				23,994.77	65.55	1,133.03	52.66
Distributed to products on cubic space basis				12,609.27	34.45	1,018.48	47.34
Total				36,604.04	100.00	2,151.51	100.00

APPENDIX TABLE 10.—*Distributor E: Details of "Selling Expense" and their allocation to sales expense, retail delivery expense, wholesale delivery expense, and miscellaneous charges*

	Selling expenses	Allocation					
		Sales expense	Miscellaneous	Retail delivery	Percent	Wholesale delivery	Percent
Supplies	$194.81	$129.87		$55.35	0.15	$9.59	0.44
Labor:							
Shipping labor	1,726.30			1,471.50	4.04	254.80	11.78
Drivers' labor	20,116.27			19,407.71	53.31	708.56	32.77
Salesmen's labor	1,001.80	1,001.80					
Drivers' bonus	1,206.32			1,206.32	3.31		
Office salaries	2,442.80			2,082.24	5.72	360.56	16.68
Bad debts	856.44		$856.44				
Transportation	7.10			7.10	.02		
Repairs	49.19			41.93	.11	7.26	.34
Depreciation	111.00			94.62	.26	16.38	.76
Rentals	154.68			131.84	.36	22.84	1.06
Taxes	37.63			32.08	.09	5.55	.26
Insurance	66.68			56.84	.16	9.84	.45
Communications	134.25			134.25	.37		
Unclassified	437.77			373.16	1.02	64.61	2.99
Publicity	955.50	955.50					
Professional	91.10	91.10					
Repairs supplied:							
General	109.48			109.48	.30		
Tin shop							
Service supplies:							
Print shop	177.58			151.37	.42	26.21	1.21
Building	155.94			132.92	.36	23.02	1.06
Cabinet shop							
Milk cans	206.64					206.64	9.56
Milk cases and bottles	778.90			683.76	1.88	95.14	4.40
Delivery (vehicle expense)	10,227.68			9,876.67	27.13	351.01	16.24
Ice	359.63			359.63	.99		
Total	41,605.49	2,178.27	856.44	36,408.77	100.00	2,162.01	100.00
Distributed to products on package basis				24,167.77	66.38	1,323.92	61.24
Distributed to products on cubic space basis				12,241.00	33.62	838.09	38.76
Total				36,408.77	100.00	2,162.01	100.00

APPENDIX TABLE 11.—*Distributor F: Retail and wholesale delivery expenses, and their division according to bases of distribution to products delivered, October 1935*

	Retail delivery expense		Wholesale delivery expense	
	Amount	Percent	Amount	Percent
Labor:				
Shippers and checkers	$175.72	2.59	$57.71	4.42
Chauffeurs and helpers	2,368.33	34.89	535.65	41.06
Horse drivers and helpers	1,689.55	24.89		
Commissions	173.58	2.56		
Route foremen	459.20	6.76	150.80	11.56
Supervision	177.44	2.61	58.28	4.47
Employees' allowances	86.80	1.28	28.52	2.18
Total labor	5,130.62	75.58	830.96	63.69
Operating services and supplies:				
Ice manufactured				
Ice purchased	52.48	.77	17.26	1.32
Bottle expense	171.35	2.52		
Bottle exchange	82.53	1.22		
Cartons, paper, etc.	4.48	.07	1.48	.11
Miscellaneous supplies and expense	2.55	.04	.85	.07
Subtotal	313.39	4.62	19.59	1.50
Repairs: Milk cans and jackets			29.60	2.27
Transportation:				
Tolls and ferriage	52.50	.77	115.75	8.87
Freight, express, and cartage			22.65	1.74
Auto expense	712.94	10.50	262.13	20.09
Stable expense	515.73	7.60		
Subtotal	1,281.17	18.87	400.53	30.70
Unclassified:				
Licenses				
Shortage unsecured	39.42	.58	3.94	.30
Subtotal	39.42	.58	3.94	.30
Fixed charges:				
Depreciation milk cans and jackets			12.14	.93
Milk cases	23.98	.35	7.88	.61
Total fixed charges	23.98	.35	20.02	1.54
Grand total	6,788.58	100.00	1,304.64	100.00
Distributed to products on package basis	5,130.62	75.58	830.96	63.69
Distributed to products on cubic space basis	1,657.96	24.42	473.68	36.31
Total	6,788.58	100.00	1,304.64	100.00

APPENDIX TABLE 12.—*Distributor G: Retail and wholesale delivery expense and their division with reference to bases of distribution to products delivered October 1935*

	Retail delivery expense		Wholesale delivery expense	
	Amount	Percent	Amount	Percent
Labor:				
Shippers and checkers	$313.80	8.76	$288.14	17.46
Chauffeurs and helpers	1,574.23	43.94	197.37	11.96
Commissions	164.75	4.60		
Route foremen	209.50	5.85		
Supervision	138.91	3.88		
Employees' allowances	44.02	1.22		
Total labor	2,445.21	68.25	485.51	29.42
Operating services and supplies:				
Ice manufactured	47.43	1.32	43.55	2.64
Bottle expense	258.91	7.23		
Bottle exchange	73.56	2.05		
Cartons, paper, twine, etc.	51.64	1.44	47.41	2.87
Miscellaneous supplies and expense	1.40	.04	1.30	.08
Subtotal	432.94	12.08	92.26	5.59
Repairs, milk cans and jackets			128.21	7.77
Transportation:				
Tolls and ferriage				
Freight, express, and cartage			561.60	34.03
Auto expense	673.47	18.80	311.37	18.87
Subtotal	673.47	18.80	872.97	52.90
Unclassified: Shortages unsecured	26.95	.75		
Fixed charges:				
Depreciation:				
Milk cabinets			.50	.03
Milk cans and jackets			66.91	4.05
Milk cases	4.36	.12	4.01	.24
Subtotal	4.36	.12	71.42	4.32
Total, other than labor	1,137.72	31.75	1,164.86	70.58
Grand total	3,582.93	100.00	1,650.37	100.00
Distributed to products on package basis	2,445.21	68.25	485.51	29.42
Distributed to products on cubic space basis	1,137.72	31.75	1,164.86	70.58
Total	3,582.93	100.00	1,650.37	100.00

APPENDIX TABLE 13.—*Seven milk distributors' expense per sales unit and per quart equivalent of delivering milk and cream on retail routes, by sales units, October 1935*

[NOTE.—Computed without assigning to transportation expense any part of drivers' and chauffeurs' compensation]

Product and unit of sale	Delivery expense													
	Distributor A		Distributor B		Distributor C		Distributor D		Distributor E		Distributor F		Distributor G	
	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart	Per unit	Per quart
Milk:														
Ordinary pasteurized:	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*	*Cents*
Gallon	3.03	0.76	5.03	1.26	5.65	1.42	5.66	1.41	5.73	1.43	4.10	1.03	4.42	1.10
Quart	2.56	2.56	4.24	4.24	4.56	4.56	4.52	4.52	4.64	4.64	3.44	3.44	3.62	3.62
Pint	1.96	3.92	3.55	7.10	3.86	7.71	3.56	7.11	3.72	7.44	2.88	5.76	2.95	5.90
½ pint	1.73	6.92	3.24	12.97	3.77	15.07	3.34	13.37	3.52	14.07	2.63	10.50	2.64	10.56
Average	------	2.80	------	4.44	------	4.68	------	4.85	------	4.87	------	4.19	------	3.87
Special grades:														
Quart	2.56	2.56	4.24	4.24	4.56	4.56	4.52	4.52	4.64	4.64	3.44	3.44	3.62	3.62
Pint	1.96	3.92	3.55	7.10	3.86	7.71	3.56	7.11	3.72	7.44	2.88	5.76	2.95	5.90
½ pint	------	------	3.23	12.92	3.77	15.07	3.34	13.38	3.50	14.00	------	------	------	------
Average	------	2.68	------	4.61	------	4.68	------	5.18	------	5.09	------	3.70	------	3.98
Cream:														
15 to 20 percent:														
Gallon	3.03	.76	5.00	1.25	5.61	1.40	------	------	5.73	1.43	------	------	4.42	1.10
Quart	2.56	2.56	4.24	4.24	4.56	4.56	4.52	4.52	4.64	4.64	3.44	3.44	3.63	3.63
Pint	------	------	3.55	7.10	------	------	3.56	7.11	3.72	7.45	2.92	5.84	2.95	5.90
½ pint	1.73	6.90	3.24	12.97	------	------	3.34	13.37	3.52	14.07	2.63	10.52	2.64	10.56
¼ pint	1.66	13.26	------	------	------	------	------	------	------	------	------	------	------	------
22 to 30 percent:														
Gallon	3.03	.76	5.00	1.25	------	------	------	------	------	------	------	------	------	------
Quart	2.56	2.56	4.24	4.24	4.56	4.56	4.51	4.51	4.64	4.64	3.43	3.43	3.62	3.62
Pint	------	------	3.55	7.10	3.86	7.71	3.56	7.11	3.73	7.46	2.83	------	2.94	5.89
½ pint	1.73	6.91	3.24	12.97	3.77	15.07	3.34	13.37	3.52	14.07	2.63	10.52	2.64	10.56
¼ pint	1.66	13.26	------	------	3.74	29.94	------	------	------	------	------	------	------	------
32 to 40 percent:														
Gallon	3.03	.76	------	------	5.67	1.42	------	------	------	------	------	------	4.41	1.10
Quart	2.56	2.56	------	------	4.56	4.56	------	------	------	------	------	------	------	------
Pint	------	------	------	------	3.86	7.71	------	------	------	------	------	------	------	------
½ pint	1.73	6.90	------	------	3.77	15.07	------	------	------	------	------	------	------	------
Average	------	7.48	------	11.70	------	12.64	------	10.61	------	11.81	------	9.09	------	6.27
Sour:														
Gallon	3.04	.76	------	------	5.00	1.25	------	------	------	------	------	------	------	------
½ gallon	------	------	------	------	4.06	2.03	------	------	------	------	------	------	------	------
Quart	------	------	------	------	3.55	3.55	------	------	------	------	3.50	3.50	------	------
Pint	------	------	------	------	3.60	7.20	------	------	------	------	------	------	------	------
½ pint	1.73	6.90	3.06	12.24	------	------	------	------	------	------	2.50	10.00	------	------
10-ounce jars	------	------	------	------	3.37	10.78	------	------	------	------	------	------	------	------
Average	------	5.95	------	------	------	9.20	------	------	------	------	------	5.84	------	------

30730

END OF
TITLE